

# AMERICAN FRUIT GROWER

LIBRARY of the  
Massachusetts  
Agricultural  
College  
DEC 9 - 1918

Vol. XXXVIII-



December 1918



Number 12



*Edited by Samuel Adams*

0 SSVI  
1918  
CLASS 1100 188V SSVI  
CHARTER 8 821040



Over  
10,000 Growers Planted  
**Golden  
Delicious  
Trees Last Year!**

**T**HIS remarkable golden apple tree has scored success even quicker than its teammate tree—Stark Delicious, the King of Red Apples.

Jos. Gerardi, Illinois orchard authority, was right when he said "the public has long been clamoring for a long-keeping golden-yellow apple, of large size, of regular shape and highest quality — and *we now have it in the Golden Delicious!*" Another significant fact (of vital interest to every man who is to plant any sized orchard) is that Golden Delicious

**—has earned quickest recognition of America's Horticultural Authorities.**

This super-superb apple averages 50 per cent larger than Grimes Golden. Infinitely superior in flavor and keeping qualities. As Benj. Douglass, Ex-State Entomologist of Indiana, who reports these trees growing splendidly in his orchard, declares, it is "more tender and more juicy than any Grimes Golden I ever saw. The finest yellow apple I ever tasted." Its crisp, tender, creamy yellow flesh is blessed with a spicy, aromatic flavor hauntingly reminiscent of a great, glorious pear. Saturated with rich, exquisite juiciness. Right now Golden Delicious is—

**—bearing golden crops in orchards in the East, Central West and Far West.**

Praises of its extreme hardiness, vigorous growth, disease-resistant and early, heavy and yearly bearing qualities pour in on us.

Photo of Middle-West-grown 1918 Golden Delicious crop—third successive heavy crop in three years. Note huge size of these golden globes of goodness—as thick as they can stick on the branches.

Silas Wilson, owner of famous 800-acre Wilson Orchards, Nampa, Idaho, writes: "Very strong growers. Hardy as Wealthy. Like Stark Delicious in late blooming. Set an apple for every blossom. Many apple varieties did not blossom heavy this year. Golden Delicious multiplied 4 to 5 times over last year."

See this photo of a loaded Golden Delicious branch. Recently G. J. Hopkins, successful Virginia orchardist, saw this crop.

**—and one glance at this loaded branch made G. J. Hopkins buy 600 trees.** These trees have never shown a sign of blight. Our records prove that it has most sturdy vitality. Loss in planting practically nothing. Never in history have we offered a variety, old or new, with such amazing vitality, a quicker grower or an earlier or surer bearer. Its fruit will command record market prices—particularly on late winter markets. A superb shipper because of regular shape. Also because it is a truly amazing long keeper, retaining its wondrous beauty and full, sprightly flavor months after Grimes Golden is rotted and gone.

**Send Coupon for 1919 Planting Guide**

—together with intensely interesting Portfolio presenting Golden Delicious in its full size and its striking beauty of Nature's coloring. These books will give you the very latest authentic facts on this great apple, as well as all the famous Stark Bro's Fruits. Get these books at once. Don't make a single tree purchase without consulting them. They will protect you against mistakes in either price or variety selection. **SEND THE COUPON TODAY.**

**STARK BRO'S NURSERIES**

The ONLY Stark Nursery in Existence

Always at **LOUISIANA, MO.** Since 1816

**A  
World's  
Record  
for Early  
and Heavy  
Bearing! Missouri-  
Grown Golden  
Delicious Fruiting  
Crop of Perfect Apples  
18 Months After Graft Was Set!**

**STARK BRO'S NURSERIES, Box 140, Louisiana, Mo.**  
Send me at once your 1919 Fruit Planting Guide  
and Golden Delicious Portfolio.  
Name.....  
St. or R. R. No.....  
Post Office.....  
State.....





### Subscription Rates

Three Years for \$1.00; or One Year for 50c.  
Chicago and Canada, 75c per Year. Foreign, \$1.00 per Year.

**Expiration.**—The date to which your subscription is paid is printed on the address label of your paper. All subscriptions are stopped promptly at expiration. Before your subscription expires send \$1.00 for a three-year subscription or 50c for one year, and avoid missing an issue.

### Advertising Rates

\$1.00 AN AGATE LINE FLAT, OR \$14.00 PER INCH.  
Classified, 15c a word.

# AMERICAN FRUIT GROWER

A consolidation of Green's Fruit Grower, Rochester, N. Y., Established 1880;  
The Fruit Grower, St. Joseph, Mo., Established 1889;  
American Fruit Grower, Charlottesville, Va., Established 1915

Published monthly by **AMERICAN FRUIT GROWER CO., Inc.**

329 Plymouth Court, CHICAGO, ILL.

Eastern Office: Rochester, N. Y. Home Office: Charlottesville, Va.

**Samuel Adams, Editor and Publisher**

**Associate Editors**

**PAUL C. STARK** **MARY LEE ADAMS**  
**CHARLES A. GREEN**

**H. R. MANKIN**, Business Manager

**J. E. FORD**, Advertising Manager

**J. A. BUCHANAN**, Western Advertising Manager

**Special Advertising Representatives**

**JOHN M. BRANHAM CO.**

New York Chicago Detroit St. Louis Atlanta

Entered as second-class matter Oct. 17, 1917, at the Post Office at Chicago, Ill., under the Act of March 3, 1879.

VOL. XXXVIII

DECEMBER, 1918

No. 12

## Amateur Grape-Growing in America

By S. J. Bole, Missouri

**T**HE GRAPE is one of the most cosmopolitan of fruits, certain varieties of which will grow in almost any region. As a farm home is nearly always located on an elevated and well-drained site, grapes generally grow well in the back yard or farm garden. An ideal site for grapes should be well located with reference to (1) water drainage, (2) air drainage, (3) exposure, (4) influence of a body of water and (5) kind of soil.



A vine trained to a stake, the high renewal and spur method being used

A well-drained soil is very important. This is seen in the case of wild grapes which grow best on hillsides and along river banks. The nature of the first three or four feet of subsoil, and the amount of slope, will give one an idea of the water drainage.

Good air drainage is important to ward off killing frosts in the late spring or early fall. A site with good air drainage in Michigan would be less injured by frost than would a site with poor air drainage in Kentucky. The slope of the Chautauqua grape belt in Western New York and Pennsylvania, protects grapes from frost injury, while grapes grown on the flat land along Lake Erie in Northern Ohio, are frequently badly injured or wholly destroyed.

### Influence of Water

Grapes in Europe have always been grown on the terraced slopes of hills or river banks. Early grape-growing began along the Kentucky, Hudson and Ohio rivers, but such land is no longer used. Modern vineyards are planted on land level enough to be readily cultivated and sprayed. The direction of the slope has little if anything to do with the results. The blossoms of grapes develop slowly from winter buds which start quite late in the spring. This is why grape blossoms are seldom killed by spring frosts, especially on land that has a good air drainage.

Bodies of water are not necessary for a good site, but a lake or river on the windward side of a vineyard has a considerable influence on the sudden changes of temperature in that vineyard, and keeps the grapes from starting early in the spring and prevents the first light frosts in the autumn.

The Concord and other hardy grapes will grow in almost any kind of soil, but well drained, sandy, sandy loam or clay-loam soil is especially good. Soil may be too fertile, the lighter soils of New York and Michigan produced from 30 to 50 per cent more grapes to the acre, and of a higher quality, than do the soils of Iowa and Missouri.

### Kind of Plants to Buy

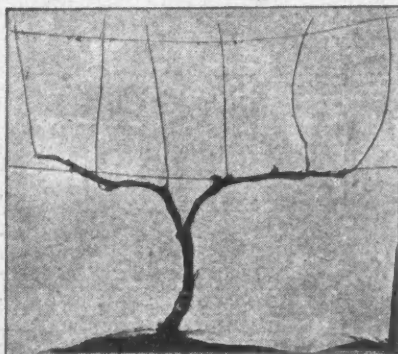
If grapevines are given reasonable care they will thrive for 50 years. During the fruiting season of 1917, the writer visited the Jones vineyard near Lawton, Mich., which has been planted 49 years and which was still bearing heavily. Many of these canes had never been rejuvenated by letting a new cane grow up from the roots.

Since the vineyard or arbor is to last a lifetime, only the best plants should be planted. Nurserymen sell No. 1's and No. 2's of both one and two-year-old plants. They are all grown from cuttings and should have a well-developed root system. This means that only two-year plants should be purchased. Of these, the No. 1's, or best plants, should always be selected.

### Preparation of the Land

Plants should be set where a hoed or cultivated crop has been grown the year before. As the vines are to last for many years, the land should be carefully prepared. If the subsoil has a hardpan of any sort, it should be broken up, either with some hand tool in case of the garden, or the subsoil plow where a vineyard is to be planted. If the soil is plowed or spaded in the fall, it should be plowed or spaded again in the early spring. It should then be cultivated with a spring-tooth harrow and a spike-tooth drag.

The field is then marked out, making the rows as straight as possible. This is nec-



The upright system in pruning. Used now only in the east

essary that the canes be in a straight line and directly under the vines of the trellis. In the north and east, the plants are commonly set eight feet square, while the southern growers plant the vigorous *Rotundifolia* varieties ten to twelve feet apart.

The rows may be run in either direction, but north and south is slightly preferable. The sun can then shine on both sides of the row and on nearly all the surface soil, at sometime during the day. This helps somewhat in the control of black rot and other fungous diseases.

### Time to Plant

The best time to plant in the north is early in spring. The plants are then strong and vigorous, due to the roots being cal-

lused over in storage and being protected from the freezing weather and drying winds of winter, in the storage sheds.

In the south, grapes are planted during early December. Here the soil is not frozen and dried out during the winter. The winter rain also packs the soil firmly about the roots. The ends of the roots also callus over in the soil and are ready to start growth in the spring.

### How the Plants are Set

Before planting, the roots are pruned back to six or eight inches in length and the canes to two or three buds. This is readily done with a sharp knife or pair of pruning shears.

Holes are dug a foot or more square and somewhat deeper than the rooted portion of the plant. The plants are set at the same depth that they were in the nursery row. The roots are then covered with the fine surface soil, or this soil mixed with a forkful of well-rotted manure. When the hole is nearly full, this soil is pressed down firmly against the roots. The few inches of cane with its two or three buds, should show just above the dust mulch.

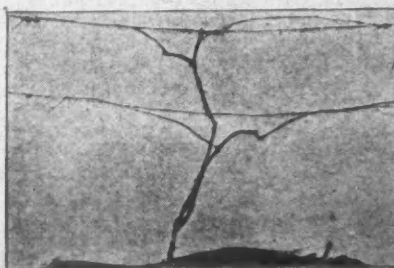
A planting plan should be made, showing exactly where each variety begins and ends. If put in a small book, it can be kept for future reference. Any failures can then be replanted to the corresponding varieties.

### Cultivation of the Vineyard

A few vines, or a vineyard of any size, should be kept well and cleanly cultivated. In case of a few vines this can be done with hand tools, mulching being often substituted for a part of the cultivation. In the large vineyard, two-horse corn implements are used.

The important reasons for clean cultivation are: (1) to kill weeds, (2) to make plant food in the soil more available, (3) to conserve moisture and (4) to aid in controlling disease and insect pests.

Cultivation should begin in the early spring and continue every two weeks until the middle of July. A cover crop sown at the time of this last cultivation aids in checking the summer's growth and ripening the wood, by reducing the plant food and moisture supply. It should be drilled and not broadcasted, in order that it may be readily plowed under. Such a "catch" crop also retains the snow in the north, and protects the soil from severe winter freezing. It also protects the soil from washing during the winter and spring. On light, sand or other soils deficient in nitrogen, a legume should be sowed. Cow-peas are good in the south, soybeans in the central portion, and Canada field peas in the north. In case of rich soils, oats or rye make a good cover. In any case, the cover crops is plowed under in the spring before the vines start to grow.



The drooping system of pruning, the Kniffen method. This is the most common method now in use

Whether a cover crop is grown or not, the vineyard should be plowed early each spring to the depth of about four inches. This may be done with a one-horse plow, a vineyard plow or a disc harrow. The rows should be hoed at least twice during the summer.

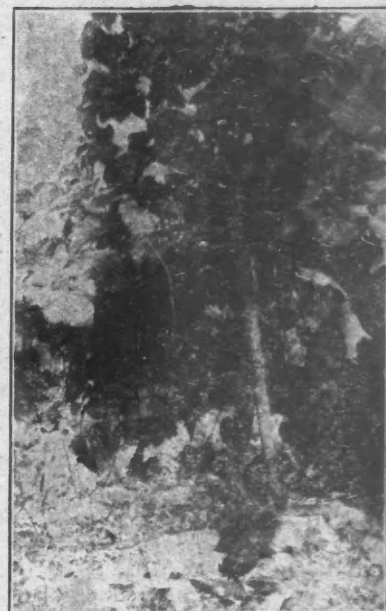
### Fertilizers for Vineyards

The large commercial growers are just beginning to fertilize their vineyards. Some use barnyard manure; some use commercial fertilizers; some use both and some use neither. Probably well-rotted manure, in which the weed seeds have been destroyed by its decomposition, is best. A liberal coating of this every few years will keep the vines vigorous and fruitful.

While fertilizing the ordinary vineyard every few years is a good practice, it would seem that spraying, pruning and cultivating should be done first. Grapevines do not respond to the use of fertilizers as do grains and vegetables.

### Pruning Grapes

While pruning and training are two separate operations, their description cannot well be separated. To prune intelligently, one must know the kind of trellis upon which the vines are to be trained. In a similar way, the kind of trellis and method of training depends on the method of pruning.



A vine in bearing trained to a stake

There really is but one correct method of pruning grapes, the renewal method. This means that from one-half to nine-tenths of the annual growth is renewed each year. The various heights at which these renewals are made requires a tree or an arbor on the one hand, the vines are left to run over the ground on the other.

Pruning and training are the most difficult and neglected operations in grape-growing. A great many of the errors and home trellises are allowed to fill up with old vines from year to year, which results in small and inferior fruit.

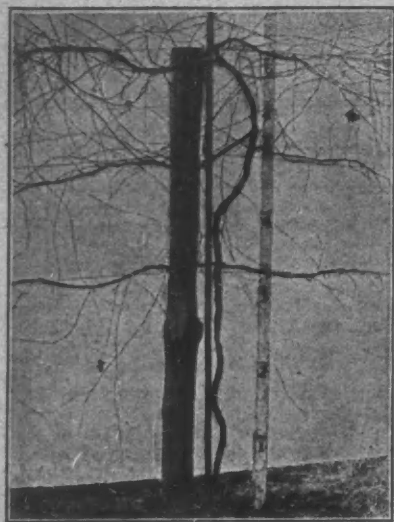
### The Fruiting Habit of the Grape

The pruning of a grapevine, like that of any other fruiting vine or bush, depends largely on its fruiting habit. The buds of the grape, like those of most tree fruits, develop slowly at the axils of the leaves of



new wood. When leaves drop in the fall, these become the winter buds.

If such a winter bud is carefully examined in the fall or winter the immature clusters, leaves and stem may be seen folded up in the bud. During the next summer, these buds burst and a shoot starts which grows from a few to many feet in length. The two to four clusters of immature fruit



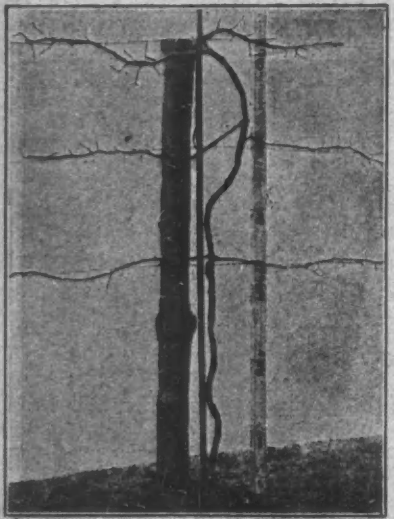
The three-wire Kniffen method as used in the south, before pruning

which are folded in the winter bud, always mature near the base of the shoot.

As winter buds grow only on one-year wood, it is seen that wood older than one year is useless except as it helps to hold the fruit upon the trellis and arbor.

#### Why Vines are Pruned and Trained

Grapevines are pruned and trained: (1) to thin the fruit, (2) to secure young and vigorous wood, (3) to produce larger and



The three-wire Kniffen method. Notice the spurs on the horizontal arms

better fruit, (4) for convenience in cultivating, spraying and harvesting, (5) to allow the vine plenty of air and sunshine, and (6) to help control insects and diseases.

The number of clusters of fruit which a vine can well mature without injury to the vine depends on: (1) age, (2) size and vigor of the vine, (3) soil conditions, (4) variety, and (5) cultivation. A vigorous growing Concord vine will produce 50 to 60 clusters, weighing about 15 pounds.



A vineyard plow at work

This is a large yield, being four and one-half tons to the acre. Estimating three bunches to each bud beyond the first one, which doesn't always bear fruit, it requires twenty buds to each cane. Dividing these twenty buds between the four arms on a two-wire trellis, there would be six or seven buds on each arm. Many growers leave enough bearing wood to secure 100 clusters to the vine. There is no objection to this if large, high quality fruit is developed.

These two or four arms may be pruned by either the long arm or spur method. The long arm is to be preferred, for the pruning and training can be more readily done and the yield is greater.

#### The Time to Prune

Pruning should be done when the vines are dormant. February is the best month in which to prune the vineyard. The vines should not be frozen at the time the pruning is done. This is early enough to prevent bleeding and late enough to avoid winter injury due to freezing.

If the vines have to be laid down for winter protection, the pruning is then done in part at the time the vines are laid down just before the ground freezes. Vines in the north, and especially tender varieties, are thus kept from freezing by being lightly covered with soil. The vines are pruned as desired when lifted in the spring.

Hand-pruning shears and either a light saw or a pair of long-handled shears are all the tools necessary. These are regular orchard tools and are used for other fruits as well as grapes.

(PART II WILL BE PUBLISHED IN JANUARY.)

#### OUR BOYS OVER SEAS

(Dedicated to my only son, Oliver Guy Vassar, who made the Supreme Sacrifice for his country.)

By ALBERT E. VASSAR, ST. LOUIS, MO.

Our sons over-seas know no fear nor regret, For they know evermore we in peace must be resting.

That no cruel iron hand shall oppress our fair land.

Our boys risk their lives—their own safety forgetting.

And the boys 'cross the wave daily show they are brave,

And proof we now have that our country they'll save.

For the right they stand firm and will see the war through.

And God's for the just—the Red, White and Blue.

Now we're thinking of them while the shells fill the air.

And war's great machines make a dreadful commotion;

As they fight 'midst the din, well we know they will win.

They're men true as steel, filled with loyal devotion.

For the land they love best, is a land that is blest.

And a land where the weary may ever find rest.

Oh, may God the Most High, the One ever so true,

Protect our dear boys and the Red, White and Blue.

'Tis not conquest we seek in this great dreadful war.

But to make this world safe and a good place for living;

So to vict'ry we'll ride, and with God by our side.

We'll win this great war and a world peace be giving;

Then off burdens will roll, and all strive as a whole.

And all nations of earth feel a gladness of soul.

And then all will see that our nation is true,

And cheers all the land for the Red, White and Blue.

With the war at an end and our prospects are bright.

And we gratefully see, daily blessings are falling;

Then will come a glad spell, and we know full and well.

That a good, lasting peace to the world hath befallen;

For our boys over there, saved our land from despair.

And the worth of our boys we will sing everywhere.

As our flag since its birth stood for all that is true.

We'll cherish that flag, of the Red, White and Blue.

#### BOYS MADE GOOD

The Boys' Working Reserve won this well-merited cable message from Gen. Pershing: "The achievements of the Boys' Working Reserve during the past year are beyond praise. The American Expeditionary Forces thank you one and all for the support which you have given us. J. J. Pershing, General Commanding American Expeditionary Forces."

## Apple Pomace—Its Uses

By Edith L. Ragsdale, Illinois

JUST recently I had occasion to visit our local cider mill and was impressed by the vast amount of pomace left after the cider had been extracted from the apple.

"Just what," I asked the manager, "do you do with the tons and tons of this stuff," pointing to the pomace, "after the cider is extracted?"

And, for the benefit of those who may be interested in this phase of the industry, I will relate the story the manager told; a story quite new and vastly interesting—or so it seems to me.

#### Talks with Manager

"We dry it," said he, "dry it and sell it to the various jelly-making plants; to the manufacturers of stock feed; to a certain extent to the various makers of breakfast food."

"It's this way," he continued, "for years pomace has been a total loss, the little leak which made great holes in the cideman's pocketbook—why, we had to pay for having the stuff hauled away—however, since the opportune discovery in 1914 by a Chicago jelly-maker that pomace carried more crude pectin to the pound than the cores and peelings (the stuff from which they had been getting the foundation of all jellies) the leak is pretty well stopped."

"The demand for dried pomace exceeds the supply; coincident, the cider-mill men and the evaporators are reaping a golden harvest where heretofore we lost money."

"In the manufacture of jelly," resumed the manager, "the waste (cores and peelings) was used most extensively, the element, pectin, the foundation of all jellies, being found in large quantities in it. However, the stuff (waste) had its drawbacks; it was wet and heavy and liable to spoil. Hence, the discovery of a method whereby this substance could be dried, yet still retain its value, was welcomed by the manufacturers."

"Heretofore the pomace had to be boiled, and a slow process it was; for the juice, or syrup, thus obtained had to be further reduced until it stood in proportion about 1 to 5; that is, the syrup had to be reduced from, say, 5 gallons to 1."

"But that, you understand, was in the days of wet pomace, the raw article just as it left the cider press; the present day article or 'dried' pomace bears no resemblance to the wet, or raw, article and must not be confused with it."

"The dried article is light, granulated, almost absolutely void of moisture, having, at the furthest, not more than a fractional part of the humidity carried by waste which contains from 20 to 25 per cent moisture, necessitating the expense of cold storage during warm weather (as it ferments quickly) and, being wet, an added sum in freight rates."

"But, as I said, that was before the day of the pomace dryer. Today, aided by scientifically constructed machinery, we are able to transform this wet material into a dry, grainy, lightweight article, to condense it, by means of still other machinery, into the essence of pectin, doing away with the tedious boiling of heretofore."

"Just how," I asked, "does this dryer operate?"

"Simplicity itself," replied the manager. "The pomace, or 'cheeses,' are dumped into the machine which shreds them finely by means of a 'picker' which keeps them in motion while drying. Power gears give motion to the square tower which, you see, has sloping wire screens on which the pomace is kept moving from one incline to another. There are 45 feet of hollow coils through which the superheated air passes. The air is first expanded in the heating furnace then conveyed by power fan up through the above referred to tower, coming in actual contact with the finished product first. Large volumes of moving, expanded, air has an affinity for taking up the moisture and for rapid drying. Highly heated, still air tends to cook the pomace, drying it out but at the same time retaining the pectin."

"And," picking up a handful of the dried pomace which, in appearance, resembles nothing so much as fine coal cinders, "you actually have a demand for this stuff?"

The manager laughed.

"A demand that we cannot begin to meet. For instance: in 1915, when we

first installed driers, we hunted for a market to dispose of the few tons we turned out; and which, incidentally, were used in the manufacture of stock feed; this season we ship, on an average, a carload of dried pomace every other day."

"Who buys it?"

"Various concerns. Mainly the jelly-makers. Some feed men. Occasionally we have an order from the breakfast food people."

"Breakfast food from apple pomace? Impossible!"

"Not a bit 'impossible.' Let me tell you a little story: Last fall I attended a banquet in New York City. One of the side dishes was a new brand of breakfast food. It looked like grape-nuts and tasted fine. It was served with cream—I had three dishes. Few knew it but I, being on the inside, was 'hep' to the fact that it was dried pomace dressed up and worked over into a wonderfully good article of diet."

Upon investigation I found this all true. Also, I found many cider-mill men in Illinois, Virginia and New York availing themselves of this new money-making opportunity.

#### Value of Pomace

The manager of the local mill tells me that there are something like 2,000 large cider mills in the United States each having a daily capacity of 1,000 bushels and upward of apples. He estimates that one bushel of apples will yield 8 pounds of dried pomace. His conservative estimate places the value of this bi-product around 3 cents per pound, 24 cents per bushel or a total of \$240 for one day's run. A step further, computing along this line of reasoning, places the figures for a 60 days' run (the average time of cider making) at \$14,000, or, providing the entire 2,000 mills do an average business, the grand total will read around \$28,000,000, a tremendous amount of money to dump out in waste. But it does not stop there.

There are ten small mills to one large one, exclusive of the custom mills, hence, the entire estimated product of the mills, as a whole, were every cider maker in the United States to take advantage of this bi-product, were to conserve and use this waste material, would enrich the producers to the extent of more than \$50,000,000 annually beside placing a valuable food product upon the market. At present a large part of this gigantic sum is lost. Much, however, is being done to bring this new industry before the orchardists and cider-mill men throughout the apple-growing country. In my own vicinity six of these driers (above referred to) have been installed. And it is gratifying to learn that wherever this branch of food conservation has been taken up the results have been most satisfactory.

A first-class article, so the manager of the local plant tells me, commands even better than 3 cents per pound, the Midwest Co. receiving as high as 6 cents per pound for the fancy grade. This grade is very light colored and is the product of the early apples, those which are sound and ripe, not mellow.

The estimated cost of the production of this bi-product is around 1½ cents per pound; that it is getting "something for nothing" there is no question.

As a stock feed the dried article (which is not sticky, wet nor gummy and must not be confused with the raw material of days gone by) is a wonderful milk producer, being rich in protein and relished by all stock. Taking up this phase of the question I asked the manager of the local plant if it were not used almost exclusively for a stock feed.

#### Some Uses of Pomace

By diligent inquiry I find that it is:

First, a highly nutritious food for man; second, that it is indispensable for commercial jellymaking; third, that it is an excellent stock and hog feed and, in the raw state, a fine fertilizer; that it is a substitute (in making breakfast foods and stock feed) for wheat and other grains just now so necessary in feeding the millions dependent upon the United States, thus, it seems to me, a subject all thinking men should investigate.

At present this industry is but in its swaddling clothes. However, the indications are that in the near future it will become a factor in the business world.







de  
fir  
ni  
go  
et  
an

oth  
suc  
var

one  
Va  
im  
us  
saf  
var  
in  
dro  
thi  
ite

I  
see  
the  
bel  
wo  
wa  
tim  
wi  
is  
of

oth  
sio  
ben  
thi  
du  
of  
pis  
clu  
pis  
pla  
ye  
pre  
do

tim  
ety  
the  
Th  
du  
ers  
To  
aft  
thi  
int  
be



# The Latest Ideas in Berry Culture

By L. J. Farmer, New York

**T**O THE berry grower, I believe that the variety question is the most important of all. The fruit grower does not obtain maximum results until he finds exactly the variety that fits into his niche. It would not do any particular good for me to recommend a list of varieties here. I might be prejudiced, and, anyway, a variety varies so much under

rounding up the supply of plants and advertising them. I knew that they were a good thing and always believed in them, but after a while I lost confidence in my ability to convince others that they were a good thing. Eventually the people

other farmer's trade. It is the best trade in the world. They come after the fruit. But, do you suppose that I can buy a barrel of first class apples for winter use from him? Not on your life. If I got down on my stomach and crawled to his place, he would not sell me anything better than windfalls, the buyer who takes all his apples might hear of it. Pulaski eats culls and windfalls until the Oregon and Washington apples come in at 5 cents apiece. Does it pay?

I live in the center of one of the largest and richest dairy sections of New York State. They used to make all the cheese for export to England. The soft cheese used for home consumption was made in Oneida County and shipped in from Utica, 60 miles away. One day a local cheese maker conceived the idea of making enough soft cheese for the local trade. Wise man. Onondaga County is a rich dairy county, abounding with some of the finest dairies in New York State, yet the Bordens secure their supply of milk for Syracuse from Gouverneur, and ship it via Utica, which makes a haul of 125 miles. Will the day ever come when we, who do not grow apples, can buy a few barrels from the large growers who do? Where is Hoover?

## Holding Back Berry Crop

Some years ago the late J. H. Hale introduced a new strawberry which he named 11-59. Someone suggested that he stretch it one minute, he did, and afterward called it "Midnight." A few years ago S. R. Divine of Sullivan County, N. Y., covered several acres of Marshall strawberries in the coldest part of the winter with straw and ice, keeping them back so that the berries ripened and were sold for a good price in August.

It is not necessary to stretch your imagination or cover your fields with ice now in order to have real late strawberries, the fall bearing varieties attend to this. If these varieties are denuded of blossoms in early spring and the blossoms kept out until near July 1st, you can pick plenty of berries in August. You can now have ripe strawberries any time from early in

Someone asked about Mr. Katkamier's idea of setting strawberry plants in the late fall instead of waiting until the busier time of early spring. It is all right. I would cover each late fall-set plant with common earth from the side of the rows, about two inches deep, as soon as it begins to freeze hard in November. What is true of strawberries, is also true of raspberries, blackberries and all small-fruit plants. It set in the fall, and a mound of earth placed over or around each plant, the results are very satisfactory and we get done what otherwise might be undone if left until spring. But plants must be well ripened and mature, or else taken up from the field, and set out the same day.

## Results Vary With Conditions

One man tells me that the St. Regis raspberry is more dependable, even for the spring crop, than the Cuthbert. He says that it seems to become more fruitful from year to year, after several years; while Cuthbert seems to fail and run out, after two good crops. Another man tells me St. Regis is a failure so far as its fall crop is concerned, and the berries are too small for market in the regular season. All this comes from New York growers.

Another man tells me that he sows buckwheat among his raspberries and currants when cultivating in early spring. No more cultivating is done until after fruiting. The pickers trample down the buckwheat, it acts as a mulch and to smother weeds. He says it is always wet under buckwheat straw. Another man tells me that unless he maintains constant cultivation among his raspberries and currants until the fruit begins to ripen, the berries will dry up. The soils must be different. What is poison to one is food to another. You must find out for yourself.

I find that one of the greatest values of a winter mulch for strawberries is in killing the early crop of spring weeds. If the mulch is left on until the plants have grown a little, and look a little sprouty, it kills myriads of weeds. Even if your soil does not heave and cause winter killing of your plants, it will pay you to experiment with mulching. Try mulching part of your bed and leave the rest unmulched.



Potted Strawberry Plants Bring Quick Crops

other conditions and in other hands. The successful berry grower must keep testing varieties himself, just feeling, feeling.

Too often fruit growers get wedded to one or two varieties and refuse to be shown. Varieties of berry fruits are continually improving, and what was good enough for us years ago is not good enough now. It is safer to plant several varieties as no one variety will pay the best of all every year, in a period of five or ten years. Frosts, drouths or excessive wet, may destroy this year the variety that was your favorite last year.

## No One Best Berry

During my experience as a berry grower, I have often run across varieties that seemed to me to be so perfect that I had the idea that at last I had found it, but before I could shout "Eureka," something would happen. A notable example of this was the Early Ozark strawberry. At one time this variety behaved almost perfectly with us, now, for some unknown reason, it is practically a failure on most portions of our farm.

A few years ago we, in common with other berry growers, came to the conclusion that pistillate varieties of strawberries were unnecessary. After going through three years of frosty weather during blossoming time, and losing most of our crops of strawberries except the pistillate varieties, we came to the conclusion that we cannot safely discard the pistillates. Potato growers who are wise plant a few of the Bugless variety every year. They know that this variety will produce potatoes when all others fail, so don't drop your pistillate strawberries.

It takes the public a tiresomely long time to recognize the merits of a new variety. Twenty years ago the first plants of the Plum Farmer raspberry were sent out. Thousands of plants were thrown away during the first ten years for want of buyers. There was little demand for them. Today it is increasing in popularity and, after over twenty years, is grown more than any other. I had much to do in the introduction of the fall bearing strawberries. I spent a lot of time and money in

awoke to their merits, but it was too late for me, and others reaped most of the benefits of my efforts.

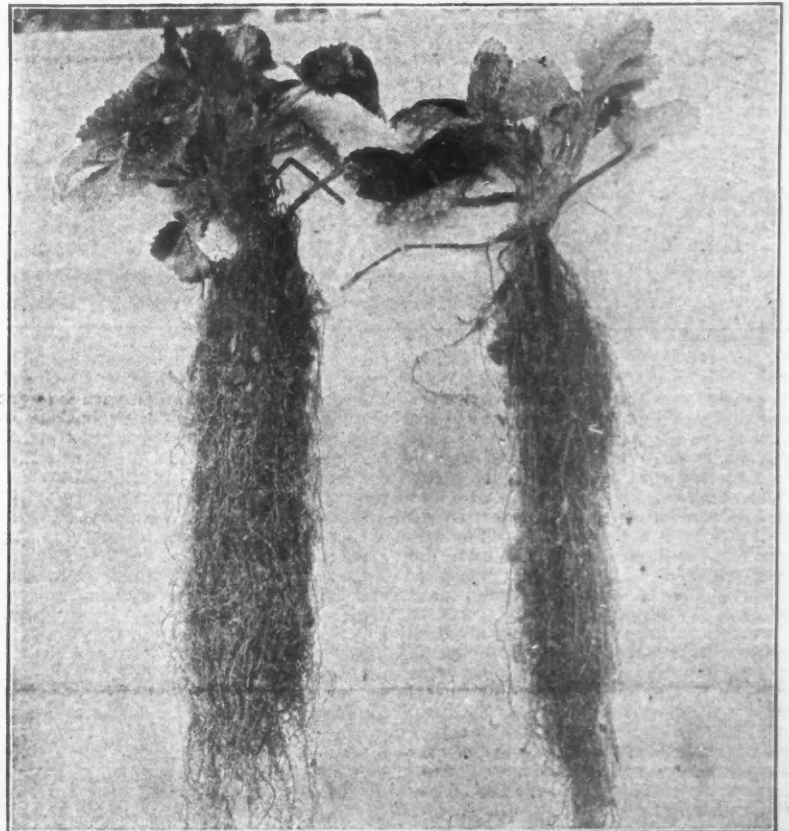
## My Marketing Methods

I have seen splendid crops of small fruits grown at great expense, and then practically thrown or given away for lack of business ability in marketing them. I used to send almost everything that I raised to New York, Boston, and other large cities. Now I seek the small markets, ship small lots to individuals, and encourage the local demand. The big city is the best place to secure a long price when there is a great shortage, provided your transportation facilities and your dealer are all right. I have a few picked dealers that I know to be all right, in local towns within our shipping radius, and I divide my shipments with them from day to day. In most cases, I do not know exactly what I am getting until the close of the season. It is understood between us that they are to receive my shipments, not refuse them, and they are to do the best they can for me. For their guidance, I enclose a tentative bill, but if they cannot do as well, I am to abide by what they can afford to send me.

There are always one or two pickings during the height of the season that bother the grower to dispose of at fair price. Anticipating this, I urge the dealers to make an especial effort to sell for canning, on these days, at reduced prices. I am also accumulating a list of people in different towns and cities, who secure orders from their friends and neighbors for canning. I ship to these people on the days that would be glut days were it not for this foresight. One woman in a city of Northern New York, 35 miles from us, handled for us in one day last season, 25 crates of strawberries, supplying her neighbors with them.

## Farmers Won't Sell Small Lots

Near us lives one of the most progressive, up-to-date apple growers of our county. I supply him with fresh strawberries from day to day. I am glad to get his or any



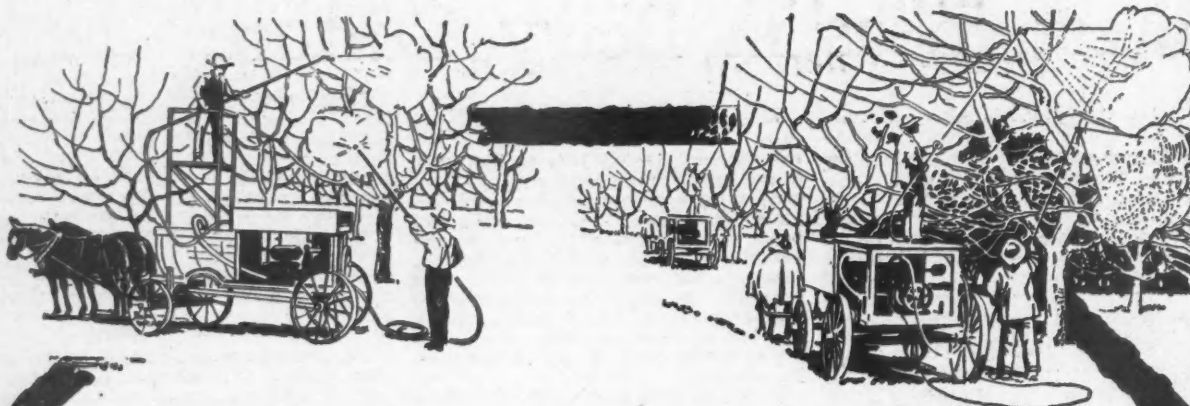
Well-Developed Root Systems

June until November, by proper manipulation of the blossoms. We had strawberries in August last season from common kinds of plants that were kept in cold storage and set out in the field about five weeks before we picked the fruit from them.

In picking time, notice how clean of weeds your mulched portion will be compared to the unmulched, even if the straw has been removed from the field.

Mulching with straw to overcome the effects of drouth does much, but cultiva-





## One Outfit with "SCALECIDE" Sprays As Many Trees As Two Outfits with Lime-Sulphur

One spray-tank of "SCALECIDE", diluted ready to apply, will cover as many trees until they drip as two spray-tanks of lime-sulphur applied with equal thoroughness. If it would take two gallons of lime-sulphur to spray a tree until it drips, and you attempted to put two gallons of "SCALECIDE" on that tree, one-half of it would run off. "SCALECIDE" will save one-half the labor of your spraying.

# "SCALECIDE"

The Complete Dormant Spray  
"Makes a Tree Outgrow Its Troubles"

"SCALECIDE" will control blight! It kills the hold-over canker that produces the twig and fire blight. And it will do all and more than any other dormant spray or combination of sprays—it will control scale and other insects, including pear psylla, leaf roller, bud moth,

case-bearer and aphids. It saves money, saves time and **saves trees**. "SCALECIDE" is sold on a **money back basis**. You take no risk. If your dealer can't supply you, we will. Write today for free circulars. It will cost you nothing to know the TRUTH. Address Dept. 11

### Help the Railroads — Protect Yourself

Whether you buy direct from us for shipment from our nearest warehouse, or whether you buy of your local dealer, you should place your order at once.

**B. G. PRATT COMPANY**  
Manufacturing Chemists  
50 Church St. New York City

tion does more. The wide matted row produces one or two good pickings in a very dry season and then sizzles up. Suppose that you dig up all the plants but the narrow row of parent plants; or better still, don't allow the runners to form a wide matted row, cut them off; then cultivate this row close up to the plants, but shallow, from the time that the berries set until picking is over, and you will be surprised at the quantity and quality of the fruit produced.

Use good baskets and substantial crates. The tendency now-a-days is to use slimy crates and baskets. It does not pay to save a half cent per quart on your package and lose five cents per quart on your fruit. The 32-quart or bushel crate is the best ever. We also make up small crates, holding 8, 12 and 16 quarts each, for our local parcel post trade. We also put cotton wadding over the tops of the top row of baskets to keep the berries from smashing.

### A Trying Task

Berry picking seems to develop the worst traits of a person's character. It cannot truly be said that there are tricks in all trades except picking berries. A man who will successfully handle an indiscriminate bunch of berry pickers without losing his temper and cursing someone, deserves a place at the right hand. For

thirty-four years I have been studying the question, I haven't solved it yet. One of the worst things to contend with is to get some pickers to fill up their baskets so they will hold out when fixed and placed in crates. The pickers are continually conveying the impression that they think they are giving you extra measure.

How would it do to weight a full crate of berries and find out about what an average quart of strawberries would weigh? Then weigh the picking stands or handies and have them all of uniform weight? When the picker brings in a handy, place it on the scales, deduct the weight of the handy, and give the picker credit for the net weight of the berries and baskets, paying by weight instead of by measure. Suppose an average four quarts of berries weighed 5 pounds, if the picker brought in 6 pounds, it would make no difference to him, because the total number of pounds for the day would be added up and divided by five to show the number of full handies or quarts picked. As different varieties vary somewhat in weight, it would be necessary to arrive at some average for all.

We numbered each berry picker the past season. We put their name and number down on a sheet of paper each day and gave them each small slips of paper with their number on the slips. When a picker brought or sent in his four quart handy of berries, he placed a number on it. In this

way we were able to tell all about who picked that handy of berries. As a result, the standard or picking was raised. We found no leaves or rubbish put in just to fill up, there were less green and rotten berries, fewer hulled berries, etc.

### How Can We Secure Labor?

I have gone somewhat into details. I believe in details. There once was a time when there were any quantity of working people that we could hire who could "Take a Message to Garcia." Now what help we get have to be shown just how to do it.

What is going to be done for the labor situation on our fruit farms and nurseries for the coming year and during the years that the war lasts? Are the fruit farms and allied business interests, that have taken years, in many cases a lifetime, to build up, going to be allowed to go to decay and ruin just for the lack of sufficient help? What is the objection to importing the necessary Chinese or Japanese and sending them back, if advisable, after the war is over? They are doing it in Europe, why cannot we?

I read an editorial in a leading Syracuse paper last summer which gave a list of some things that might be tabooed. Among these, strawberries were mentioned. Some professor was quoted as saying that the principal constituent of strawberries was rheumatism. I will admit that there are a

### American Fruit Grower

few people who cannot and should not eat strawberries. God pity them. To most of us, strawberries are a sort of blessing. Like asparagus, rhubarb, green corn, tomatoes, peaches, apples, etc., they occupy a natural and almost necessary place in our diet. Without them, we are not as efficient or as good men and women. They help our digestion, they cool our blood and therefore our brain, they, along with other fruits, cause us to live better lives.

To those people who planted potatoes in their back yards and their front yards last year, I say, don't do it this year. Your land needs rotation. Plant strawberries, the fruit is just as necessary in the long run as potatoes. Find some other place to plant potatoes, or leave it to the large potato growers. The new race of ever-bearing strawberry plants bear the very same year that they are set out, so you do not have to wait long. Tuck in a few raspberry, blackberry, currant, gooseberry, or grape plants, and you will have fruit from them before you know it.

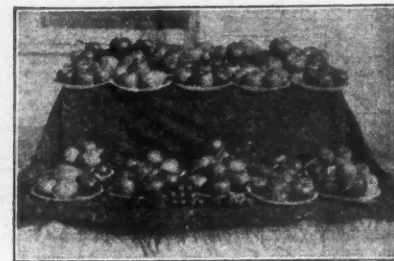
### A VARIED ORCHARD

Forty-three varieties of summer, fall and winter Iowa apples are shown in the picture, taken March 29, 1918. From the Snow, Wealthy, Mammoth Black Twig, Maiden Blush, Grimes Golden, Delicious, Bellflower, Roman Stem, Greening, Jonathan, Paradise Sweet, Ben Davis, Winesap, to the Crab Apples shown in the foreground.

These apples were grown in the orchard of Edgar Benson, Earlham, Iowa, and are but samples of the "keeping" quality of his apples. Mr. Benson said on April 27, that he had Snow apples now to eat. He has 324 trees of 18 rows, with 18 trees in each row.

### Keeps in Cement Cave

He keeps them in covered barrels in a dark cement cave, with an even temperature as nearly as possible at freezing, and



Forty-three Varieties of Apples

sets a pail of water in the cave as a thermometer and to absorb moisture. For winter keeping, he picks his Wealthy apples a little under ripe.

Mr. Benson uses a spray, which he buys in large quantities, of arsenate of lead in paste form. He uses in small amounts to the proportion of 1 ounce to a gallon of water or 7 pounds to 100 gallons.

A year ago last fall he shipped \$1,000 worth of apples in barrels to cities. These were mostly of the Jonathan and Grimes Golden variety for which he received \$3.75 a barrel. Last fall his orchard yielded but 400 bushels.

### Method of Marketing

Mr. Benson believes in "Hooverizing" in the waste of apples, as it is his custom to pick all his apples from the 15th to the 20th of October, sorting them and leaving in covered piles under trees. The largest are barreled and shipped, many of them to Des Moines. The smaller ones are left in piles on the ground where customers are allowed to go to his orchard, sort, measure and buy them for 25 cents a bushel.

In this way his apples are constantly sorted, and the rots or culls are sold for a few cents or given away, allowing no waste or rotting apples on the ground. These apples bought by local people are good quality, hand-picked fruit, smaller of course than the barreled ones, but they will keep as long as the high-priced ones and the flavor is as satisfactory. These latter apples have kept until June in the Winesap and Ben Davis variety. One year 70 varieties from this orchard was on exhibit at the county fair, and captured prizes, too, many of them!

Less Sugar, more Honey, is the theme of President Baxter of the Illinois Beekeepers, who says, "If the people of Illinois had paid as much attention to bees as they have to some worthless things, they wouldn't have to be worrying about the sugar shortage."



# The Winesap and Its Many Offsprings

## Their Value to American Horticulture

**W**INESAP is one of the oldtime apples that still maintains its popularity. New apples come and go—some make good and stay with us, others flourish for a season and then disappear, but the Winesap stays on. "Age cannot wither it nor custom stale its infinite variety."

It is grown all over the United States, but is at its best south of the 40th parallel of latitude, except in the northwest where in the fruit valleys of Oregon, Washington and Idaho it ranks as one of the great orchard money makers.

In Virginia, West Virginia, Tennessee and Kentucky it has been, everything considered, probably the most popular variety. The southern half of Ohio, Indiana and Illinois; in Missouri, Kansas, Arkansas, Southern Iowa and Southern Nebraska it is as standard as the silver dollar; in the apple community of Texas, New Mexico and Arizona and throughout California it is largely grown and highly esteemed. In parts of Southern New York and in nearly all of Pennsylvania it is largely grown. In fact, throughout the Nation, except in the north it is successfully and profitably fruited.

Little is known of the early history of the variety, but for over 100 years it has been grown and valued, until today, despite its faults, it stands near the top of the list of profitable commercial apples.

From this great old variety have come a distinctive race of apples, several of which bid fair to live as long and to be as popular as its parent. Thousands of men have experimented with Winesap seedlings in experiment stations and on private grounds, while Winesap seed under the parent trees have brought forth promising seedlings that have proved their worth and have become standard orchard sorts. Of all apples, none have been so prolific with her seedlings as the Winesap and today on the markets of the country you will find numerous varieties, well known and well liked, that are true seedlings of this well-known old favorite.

### The Stayman Winesap

Stayman Winesap is without doubt the best known of all varieties of this great family of apples. It grew from a Winesap seed and made its appearance in 1866 on the grounds of the late Dr. John Stayman of Leavenworth, Kansas. The original tree fruited nearly twenty-five years before the variety was propagated and offered for sale. The originator wrote my father, the late Clarence M. Stark, in 1895: "It is strange an apple of so great value should not be in any nursery. It is larger than Winesap, better quality, is productive and a strong grower, it has never failed to bear a heavy crop and is worth more than the whole race of winter apples. There will come a time when all will want it."

During the twenty years that this variety has been largely propagated it has become one of the best known and most popular kinds in the commercial orchards of the country and the tree and fruit have stood every test.

Stayman Winesap is decidedly larger than old Winesap, but in color it will average not quite so red. The quality, however, is far superior; in fact, I personally consider it one of the best in quality of any of the commercial apples. You find on biting into the Stayman Winesap the distinctive and richly flavored juice of a well-ripened Jeniton, and when my father first began growing the variety it was his intention to offer it as an improvement on Jeniton; however, this was not done.

The tree of Stayman Winesap is a much stronger grower than old Winesap and is longer lived. It bears big crops regularly and succeeds on a great variety of soils. It can be grown under any conditions and in any soil that will produce old Winesap, and because of superior hardiness will stand much farther north. The tree is spreading in growth, the foliage is deep green, leathery, and hangs late; it is a late bloomer and the blossoms are frost resistant; it comes into bearing young and is an annual cropper. The fruit keeps well in cold storage and in common cellar—being in season from January until April.

Stayman Winesap is popular, and its popularity is deserved. It has won its friends because of the many good points in tree and fruit, and its popularity is but just beginning. Some orchard sections are even now trying to specialize on Stayman Wine-

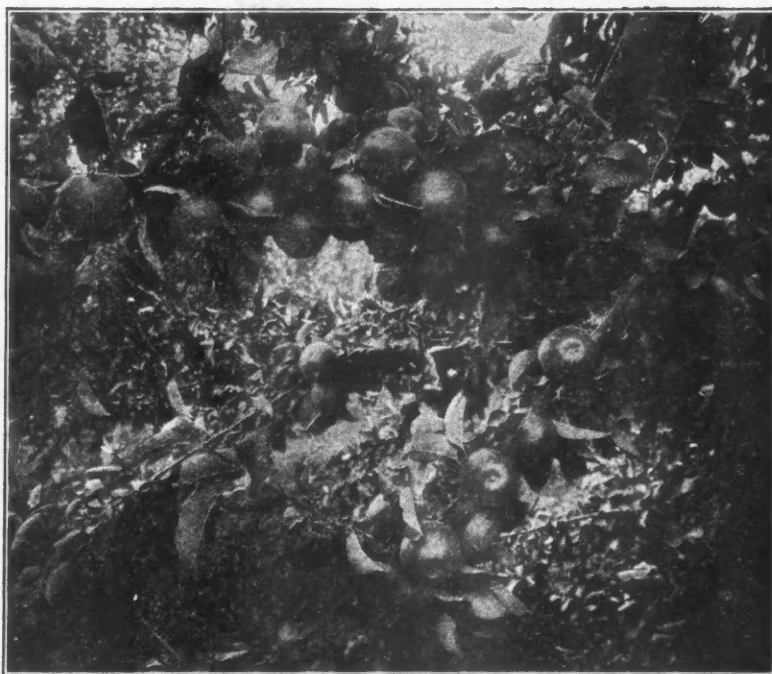
sap to the practical elimination of other varieties. So, I, at this time, accord to Stayman Winesap the first place in the group of Winesap apples.

### Mammoth Black Twig

Another seedling of Winesap made its appearance about seventy years ago, near Rhea Mills, Arkansas, and was called Mammoth Black Twig. This name was later changed by the committee on Nomenclature of the American Pomological Society to Arkansas. However, it is to this day generally known as Mammoth Black Twig and it is doubtful if the new name will ever come into general use in orchards and on the markets. Arkansas (Mammoth Black Twig) is largely grown throughout the section that produces Winesap. It is a good looking apple and an extremely late keeper. Its main fault, and the one that is causing a slowing up in its planting, is the fact that the tree is very late coming into bearing, and is what may be termed a shy-bearer, as it does not produce as large

As indicated above, confusion of names caused trouble in the Winesap family. Paragon and Mammoth Black Twig were at one time declared identical, and thousands of trees of both Paragon and Mammoth Black Twig went out mislabeled before they were finally proved distinct varieties, and even to this day there are many who say there is not difference. This is because so very many of the so-called Mammoth Black Twig orchards are really orchards of Paragon. When this mix is finally straightened out and Paragon receives the praise that is its due, it will rapidly become more popular and will take a high place on the apple list.

The Paragon tree is a vigorous one in the orchard; it is rather spreading in growth, and like the Stayman Winesap, should not be planted too close, neither sort should be planted closer than thirty feet. The tree is a young bearer and unlike Arkansas (Mammoth Black Twig) it bears full crops regularly. It comes into bearing at the same age as Stayman Winesap, is a



Stayman Winesap—Portion of 7-Year-Old Tree in Bearing

crops as old Winesap, Stayman Winesap, Paragon and other of this type. However, throughout the Southwest, South, Southeast and Central West there are many orchards of them and they are generally profitable. In size, it averages probably between Winesap and Stayman Winesap, the color is a dull red blush on dull green background, the stem end of the apple nearly always being dull green. The apple is not very attractive, but because of the fact that the quality is good and that it will keep until May it is a favorite in many sections and on many markets, however, it scalds more or less in storage. A confusion in names has given to Arkansas (Mammoth Black Twig) a popularity that I do not believe it deserves. Observation has shown me that a good many orchards of so-called Mammoth Black Twig are really Paragon.

### The Paragon Apple

Paragon is another great apple of the Winesap family. It originated probably eighty years ago on the farm of Major Rankin Toole, near Fayetteville, Lincoln County, Tennessee. Extensive production of the variety began, however, not over twenty-five years ago and while Paragon has never been exploited, it has steadily made friends, and after careful observation of all varieties of this great apple family I believe that Paragon and Stayman Winesap will finally fight the fight for popularity in this group. The Paragon retains more of the characteristics of its parent than any other Winesap seedling, it is practically the same shape, the same color and it looks very much like an enlarged Winesap. In fact, we have called it "A Glorified Winesap."

good orchard tree and neither fruit nor tree has developed serious faults to this date.

### The Arkansas Plack

Arkansas Black is another seedling of Winesap that has become well and favorably known. It originated in Washington County, Arkansas, in about 1865. It averages smaller than any other popular apple of this group, even smaller than the old Winesap, but in color there is only one variety on the market that surpasses it—the Stark King David. It is a beautiful dark red apple shaped something like Winesap, averaging a little smaller, flesh yellow, good in quality and will keep until April in average storage or a good cellar. Its beauty always commands a good price on the markets, but because the tree is a shy-bearer and because of susceptibility to scab it is being planted less and less each year.

In the fruit valleys of New Mexico, in Southern Missouri, Northern Arkansas, Southern Illinois, Tennessee, Kentucky and the Virginia it is grown moderately. It seems to be at its very best, however, in New Mexico, especially in the Pecos country. There are, however, better varieties; several of this same family are superior, therefore it should not be planted largely for commercial use, but I must say that the tree in the orchard at picking time is one of the most beautiful sights I ever saw.

### Kinnaird Choice

Kinnaird Choice is another Winesap seedling that has made good in some sections, but I do not consider it nearly so valuable as Stayman or Paragon. It origi-

nated in Williamson County, Tennessee, with a man of that name, many years ago, and throughout the Middle West and South it is planted to a considerable extent, some of the finest ones I have ever seen were grown in Indiana, where in certain sections it seems to grow to perfection. The tree is thrifty and vigorous, rather spreading, much resembling the Winesap tree. It comes into bearing reasonably young and bears regularly. It is a yellow fleshed variety and has an agreeable flavor and is in season from December until March.

### An Indiana Offspring

The above seedlings of Winesap have all made good in the final test—on the tree and on the market, and are among our standard varieties. There are other seedlings of Winesap that have been tested and found wanting, others have not been proved. The Indiana State Experiment Station has produced a Winesap seedling that seems to have some value; they have named it after one of their favorite horticultural sons, and Uncle Joe Burton, an Indiana Horticultural authority, together with other Indiana growers, are testing it. It much resembles Paragon, but is thoroughly distinct and may prove valuable. However, it seems to hold up only fairly well and my judgment is that it will not keep long enough.

The Winesap as a family comprise the greatest group of a single type of apples, and my hope is that in the future more Winesap seedlings will be found, developed and prove worthy. Present day orchardists are asking for improvements and this is the right spirit. Orchardists should be trying to improve varieties just as they are striving to improve orchard methods. We should not be contented, but should interest ourselves in every good seedling we hear of and should see that no variety of value is lost. Dr. Stayman, who gave us Stayman Winesap, Jesse Hiatt, who produced Stark Delicious, Peter M. Gideon, who produced Wealthy, J. H. Hale, who produced the peach bearing his name, Ephraim Bull, who produced the Concord grape, and others, who, with a worthy fruit have forced the world to acknowledge its value, have builded for themselves monuments more lasting than marble, and their names will be respected and honored as long as people eat fruit and read history.

### SOUTH AFRICAN FRUIT NOTES

According to the South African Fruit Grower, there is a great and growing demand for the agent who goes around the country giving demonstrations, lectures and advice; in their own words "Building up the industry which is to take the place of the gold mines." Trees are being planted by the thousand all over the South African Union.

### Compulsory Spraying Demanded

Growers in both Eastern and Western Provinces of the Cape, as well as in the Transvaal, are now asking for compulsory spraying. The road to compulsory spraying has been long and dusty but, as the advocates of this measure have traveled along it, others have joined the procession, and there is every indication of the object being reached in a shorter time than once anticipated.

### We All Learn Same Lesson

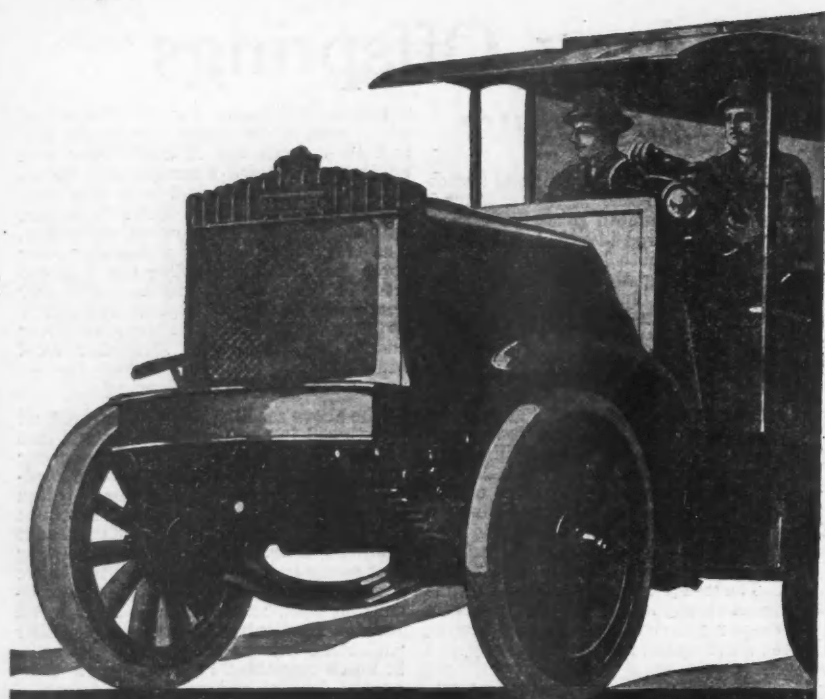
The call to fruit growers to co-operate sounds with no uncertain note from the South African Fruit Grower. "If we Americans don't hang together we will surely hang separately."—Benj. Franklin.

"Fruit Growers Co-operate. No one grower is of sufficient importance to look after himself. He does not produce enough fruit to make it possible for him to secure the best organization for selling it. Growers have got to combine and co-operate in order to get their wants listened to by those who can help them. Wake up Fruit Growers! The industry has reached a crisis. What is done now will to a large extent determine whether fruit growing is to become a staple industry in South Africa or whether it is going to sink into a condition of secondary importance."

### Co-operative Society

Cape growers form a limited liability society for handling sales.





# Traffic Truck

4,000 LBS. CAPACITY

\$1395

## A Business-Like Truck for Business-Like Farmers

Every farmer who operates on a business basis knows the motor truck is the real key to the transportation problem in farming, dairying, fruit growing and stock raising. The only question today is—What Truck?

Measured by Cost and Service, the Traffic Truck furnishes the most business-like answer.

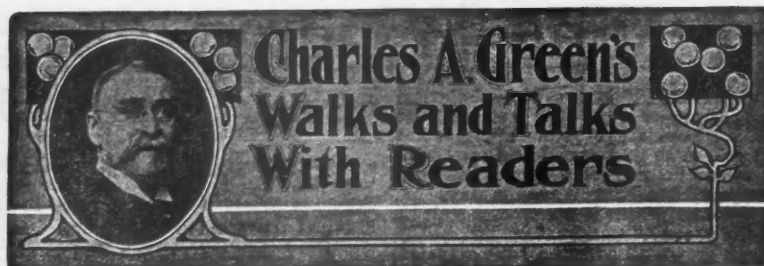
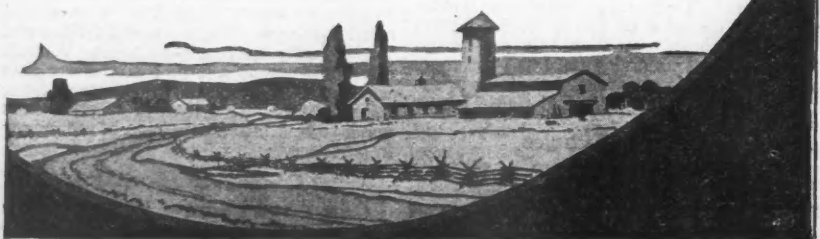
Its design is best adapted to everyday working conditions with respect to average farm loads and roads. It meets all motor truck standards of construction.

4,000 lbs. capacity, with ample power. Operates as easily as most passenger cars. Has strength and sturdiness well in excess of requirements. Unusual road clearance, which prevents stalling in deep snow or mud. Starts quickly and easily in any temperature. All mechanism enclosed for protection from dust. Taken all in all, the Traffic will handle its loaded capacity efficiently and dependably at lowest cost for running and repairs. There's not a single essential quality possessed by trucks of much higher price that is not found in the Traffic.

Investigate the Traffic fully. It will prove itself to be all you can ask for in a business truck. If there is no Traffic dealer in your town, write us for name and address of nearest dealer.

Traffic Motor Truck Corporation  
St. Louis, U. S. A.

Chassis \$1395—f. o. b. St. Louis



## Advice in Planting Evergreens

**I**F THE evergreen hedge is planted in cultivated ground similar to the home garden, the planting is simple, but if the planting is done in sod ground, as is often the case in planting a hedge, greater care is necessary.

My plan is to dig a trench in the sod 15 inches wide and at least a foot in depth, or a little over. Plant the evergreen hedge trees in this trench 12 to 18 inches apart, pressing the soil firmly over the roots. After the planting is seemingly completed, dig up the sod a foot wider than the trench, on either side of the row, and use the sod thus cut up as a surface mulch. Many planters of evergreens do not realize that evergreens will not endure the exposure that fruit trees will endure, owing to the fact that evergreens are planted when in full leaf. Do not allow the evergreen trees to remain exposed to sun and wind for an unnecessary moment, and keep them sprinkled and covered with a blanket until they are placed in the ground and the roots covered with earth.

### About Introducing a New Fruit

In response to J. F. Wittel, of Indiana, I will say that the introduction of a new fruit is something like the introduction of a new piece of machinery or a patent right. It requires executive ability to introduce a new invention or a new fruit over this vast continent. Few have the facilities or the ability or the money necessary for such an introduction.

Most new fruits are introduced before they have been thoroughly tested even by the originator, whereas they should have been tested in various localities and by various experiment stations.

No, I have never heard of a new variety being stolen as the result of its having been sent to an experiment station.

Some who attempt to introduce new fruits are not familiar with the vast numbers of valuable old varieties that are in existence. There are over 2,000 varieties of apples cataloged and almost numberless varieties of pears, peaches, plums, grapes and other small fruits. Many enthusiasts find a seedling springing up in the garden which in time bears fairly desirable fruit. The discoverer almost leaps with joy, feeling that he may make his fortune out of this little straggler who enters the world's competition for the prize as the most profitable and desirable of thousands of varieties known previously and fully tested. The chances are more than one hundred to one that there are already in existence and thoroughly tested many varieties far superior to this new candidate, but the discoverer is not aware of the many other varieties, therefore he sends out broadcast the new arrival, which in most cases is soon forgotten. Hundreds of thousands of dollars are lost each year by inventors whose inventions have not been successful and the same can be said of discoverers of new fruits. A valuable new fruit may be worth millions of dollars to this country. The difficulty is in discovering whether a new fruit is valuable, which is a difficult process.

### Advice About Planting Grapevines

J. W. Heuring, of Indiana, asks for information on the above subject. It will require about 680 vines set 8 feet by 8 to plant an acre. I would advise planting early varieties such as Concord, Worden, Niagara and a few Delaware. I have seen a vineyard planted in a cornfield carefully prepared. The plot of ground was marked with a corn marker, the legs of the marker being so adjusted as to leave the grapevines, when planted in every other row or every third or fourth row, the proper distance apart. The ground being marked both ways with this corn marker, the grapevines are planted at the crossings

of the marker. Then the field is planted to corn and cultivated much the same as though the field were simply a field of corn, only giving it a more thorough cultivation and continuing the cultivation with a hoe around each vine later in the season than if planted entirely to corn. I have known orchards of various kinds of fruit to be planted in this way successfully.

If there is a demand for fresh picked grapes in your locality a small vineyard might be very profitable, but I would not plant a vineyard with the expectation of shipping grapes to a distant market, as competition might be too great for profit.

### Tall Trees Bearing No Fruit

A lady asks what she shall do with pear trees that grow very tall but do not produce fruit. In reply I will say that my experience is that tall pear trees are not so productive as a rule as lower branching trees.

We have discovered that part of a row of Anjou pear trees bore profusely at Green's Fruit Farm, while another part of the row bore no fruit whatever. On investigation we found that the fruitful part of the row had been cut back severely in the new growth of the past season in order to get scions for budding. The largest pear grower of Western New York finds that he can make his pear trees more productive by cutting back a large part yearly of the past season's growth. This cutting back gives a lower and more condensed head, making it easier to pick or spray the fruit, and tends to make the trees more productive and to bear sooner after transplanting.

### Fruit Growing on Filled-in Land

I have at the end of my lot a space 115x100 feet, of which I would like to make an orchard, using either Jap plums, dwarf pears or dwarf apples, or all three, but do not wish to waste time or money until I have had your advice. The land was low and moist and has been filled in about 12 or 15 inches with ashes, leaves and street cleanings. Will any of the trees named grow in that soil, or will all three of them grow there? M. E. Daniels, New Hampshire.

In reply I will say that in planting in soil filled with such refuse as you speak of the hole for each tree should be made larger than ordinary, the tree set a little deeper than ordinary, and the earth over and around and on top of the roots of each tree, should be garden soil drawn in from some other source, all tramped in firmly over the roots. In other words, do not try to make the trees live with a covering of refuse of various kinds over the roots. A little refuse over the surface after the tree is planted would do no harm. You could not expect a tree to live planted in a bed of ashes or leaves.

Street cleanings are as a rule so strong a tree would not grow when planted in them, though the sweepings might look like ordinary soil. A load of such street cleanings is almost as valuable as a load of barnyard manure.

Dwarf pears, quince trees and apples will do rather better than anything else on this low land. Plums would probably succeed if given care.

### Planting Fruit Trees on Virgin Soil

Will my fruit trees grow in virgin soil? Theodore Stearns, New Jersey.

Reply: I am not quite sure what you mean by virgin soil. If you mean soil that has never been plowed but is simply surface soil, certainly the items you speak of will thrive there. If by virgin soil you refer to subsoil taken out of cellars or other excavations I will say that such subsoils are not desirable for the growth or welfare of any kind of fruit trees or plants.



# Our Editor's Page

## \$20 For Truck Experience

FOR the four best letters telling of our readers' experience with trucks, we will give four cash prizes of \$10, \$5, \$3 and \$2.

We will also pay liberally for all photographs that we can use in this connection.

Our object is to give those who are contemplating the purchase of a truck, the benefit of your experience. And we want it to be a candid relation of all the advantages and disadvantages which you have found in your truck: The saving of labor, the cost of operation and repairs, the time-saving feature and what it has been worth to you. Let us know how the use of the truck compares with the use of horses. What kind of service does the manufacturer or dealer give you? Just sit down and think of all the questions you would like to ask if you were thinking of buying a truck, and then answer them for the other man.

All letters in this competition must be sent to us by January 1st. While there are no rules as to length of letters, brevity that is consistent with full information is preferable.

Address Editor Tractor and Truck Department, AMERICAN FRUIT GROWER, Chicago, Ill.

## A World At Peace

THIS is going to be a real Christmas when December the 25th comes round. For more than four years the thought of raging battles has obscured our joy. This year we dwell with inexpressible relief and joy on thoughts of a whole world at peace. In the fun and mirth of Christmas day, we sometimes forget that we owe the celebration of the day itself, to the One whose coming was proclaimed as bringing Peace on earth, good-will toward men. Never since the Prince of Peace was born, have such "glad tidings of great joy" been given to humanity.

We knew from the beginning that the Allies could never be conquered. We knew this, not only because the right was overwhelmingly on their side, but also because we were fully convinced, even before Uncle Sam jumped into the war, that we would never sit by and permit an event so destructive to civilization, to come to pass.

Maybe we are a vain people, we have some few things to be vain about, a love of fair play for instance, and the courage and strength to enforce it. We had a wholesome conviction that, just because we were in the scrap, it was bound, absolutely bound, to come out all right. The only thing that has surprised us, is the quick end of the struggle. This is what floods our hearts with joy, and this is what will make this Christmas the most memorable in our whole lives.

We have made some sacrifices—nothing in comparison with the other nations, but we will still make many more—and now look at the result and say in your inmost soul, that it has all been worth while. Yes, even you—sad parents and wives of dead

heroes, can know that it has been most tremendously worth while. For what is the value of any individual life, save as it helps other lives? And how else could these dear ones possibly have so greatly helped the whole world?

By their efforts autocracy is forever discredited. The will of the people will rule the people. That is glorious. We know that our boys "over there" who will never come back to us, have followed most closely in the footsteps of Him in whose name we celebrate Christmas. "As He died to make men holy" so have they "died to make men free." This thought should not dim our gladness, but its uplift should spur us on to be in some small measure worthy of those who "cast the world aside" that we might in security and liberty, work out each one his own salvation both spiritual and material.

A Merry Christmas and many, many Happy New Years in which there shall be "peace in all your hearts and peace in all your homes."

## Fertilizer Now or Never

FOR some time past the slogan has gone forth, "Order your fertilizers early," and most farmers have taken this to mean that they would be doing their part and securing their supply, if they ordered in January or February. Not at all—if you want your fertilizer either early or late, you must order it now.

A careful survey of the field brings out the points that account for this unusual necessity. Fertilizer concerns, as is well known, were not able to fill more than 75 or 85 per cent of their orders last year. This year still more difficult problems confront them.

Labor conditions, already bad, have grown worse. It is reported to the AMERICAN FRUIT GROWER, that in the past month or more, factory forces have been cut 30 or 40 per cent. It makes no difference whether this scarcity has been occasioned by the demands of the draft, the ravages of influenza, or other circumstances, the fact remains, and there is small hope of improvement.

Factories realize that the only possible way of meeting the emergency is to keep the available force working right along, and, in order to do this, orders must be received steadily from now on and shipped with the least possible delay. The farmer cannot count, as formerly, upon the factories manufacturing the fertilizer and storing it for him until he is good and ready to indicate what his wants will be. He must absolutely order promptly and undertake to store his supply in his own barns.

We hope that all readers of the AMERICAN FRUIT GROWER will rally to the call, for, if they allow themselves to get left out of the fertilizer deal, their crops will of a surety fall short and the increased production, which is so much needed, will become an impossibility.

## County Juvenile Courts

RECENT investigation in New York State shows that both in legal quarters and in domestic relations, a deplorable lack of wisdom is shown in neglecting the means for keeping the children of rural communities from juvenile delinquency. The same conditions as exist in New York are doubtless duplicated in other states.

Youth is vivid, tingling with animation. That little dynamo we call the child, demands "something doing"—no matter what. We remember the ludicrous and yet wistful ejaculation of a timid young girl in a small country town: "Oh! I do wish we'd have an earthquake!" Something, anything, to break the deadly monotony. It is the urge and the longing of youth that make the small boy long to be a pirate, a bandit, an explorer. Children naturally demand action, recreation, and if they cannot get it in the right way the average youngster is going to get it in the wrong.

Parents are, of course, primarily responsible for neglecting to provide the child with healthy occupation and amusement in leisure hours. Too often the busy man and woman forget how impossible it was just to wait, when they were the same age as their children now are. The poorly equipped rural school gives little or no attention to the children after school hours. The justices of the peace, under whose jurisdiction many a delinquent child comes, show distinct indifference to the personal needs of the children under their, so-called, supervision. Churches were found to take hold of the social requirements of youth more helpfully than the average rural school, but there was no regularity of organized action on their part.

In healthy, normal surroundings the healthy, normal child will not grow up a delinquent. Parents and teachers are urgently appealed to to realize more fully the social needs of the growing child. This will lessen incalculably the number of children who will come under the jurisdiction of the law. When a child goes wrong in spite of, or because of, his surroundings, there should be a County Juvenile Court to which he may be committed, which shall investigate the personal needs of the delinquent and bring him back to paths of righteousness, rather than commit him to the general legal processes for hardened criminals which will merely keep him forcibly out of evil ways for a time.

This too often results in a prompt backsliding just as soon as the restraint is removed. By the present methods many a potentially good citizen is lost while, instead, there is laid upon the community the burden of a wasted and stunted life which is apt to end in a prison. Prisons are expensive, good citizens are the greatest asset of any community. Keep the young folks interested and amused and you will keep them from harm. Let every rural community work for a County Juvenile Court.

for  
Her  
Xmas

THIS is to be the year of useful gifts. Gifts of service and utility. Your Government suggests and recommends this.

The woman who takes pride in the appearance of her home, and most women do, will appreciate a gift of such service and utility as

**O-Cedar**  
Polish

Not only as a gift of service and utility but a gift of cheer because O-Cedar brings brightness and beauty to the home. Most women know O-Cedar Polish. They know it cleans as it polishes. It brightens and beautifies all furniture and woodwork.

25c to \$3 sizes at all dealers

Channell Chemical Co.  
Chicago



## Buy a Home in Albemarle

and live among the most delightful people in the world, in a section that is rich in the historical lore of the country. You will make money and friends, live longer and happier, and give your children a richer heritage in future happiness.

WRITE FOR A FREE BOOKLET

Charlottesville Chamber of Commerce, Charlottesville, Va.



## BEAUTIFYING THE HOME & GROUNDS



By Mary Lee C. Adams

## Work Toward an Ideal

SO FAR as we can learn, Adam and Eve were the only human beings ever born into a ready-made paradise. That they did not appreciate it is shown by the careless manner in which they violated the rules, and were promptly and properly ejected. Even had they remained, our own opinion is that they would have missed a lot of fun.

The constantly recurring thought expressed in the words, "It is better to journey hopefully than to arrive," is applicable to every field of endeavor. It is probably happier, and certainly more interesting, to work out a scheme of beauty about our homes which shall fully answer to our personal preferences, rather than to profit by some other person's work to such an extent that we feel there is nothing more to be done.

### An Orchard Home

As the AMERICAN FRUIT GROWER is a journal primarily for fruit growers, it is probable that a large majority of our readers are living in orchard homes. The phrase calls up a picture of loveliness, of blossom-perfumed days, of fragrant, delicious fruit. Such a picture has its counterpart in many realities.

Not a few orchard homes, however, fail to make the most of their natural advantages. Nothing can keep the orchard from being in itself exquisite, but it is sometimes so little in evidence that only those who do actual work in it profit by its delights.

It is not unusual for the visitor to the orchard home to get a serial impression something like this: First—the barn, which should be to one side and sheltered by trees or vines, stands in full view in all its blatant bareness and uncompromising utility. Just as the visitor expands his nostrils in hopes of getting a whiff of fruity perfume, he is saluted with a reminder of the pigsty. Stables, pecking houses, cow lots, may all add to the offense before the dwelling is reached. Will that visitor be in a mood to appreciate whatever charm there may be within?

### Avoid These Mistakes

If you are planning your own grounds it is easy to avoid flagrant errors, but if you are not the first comer, you sadly realize that buildings once placed must, as a rule, stay put. Most of us live on places that were laid out before such a combination as beauty and utility was considered anything but "foolishness."

"Are we down-hearted? NO!" If we can't get what we like, we must like what we get. Much may yet be done. Just as, in seeking to hide a spot or worn place on a garment, a bit of trimming may be applied with such decorative effect that it looks better than before, so often the very undesirability of some feature of the home grounds may induce an attractive planting of vines or trees, or result in an inviting shrubbery. An arbor that shuts out the view of an unsightly shed will give more pleasure than one which serves no other purpose than just being pretty in itself.

If you can't get a fresh start, you must lay aside cut and dried axioms as to the "proper" laying out of the grounds. Stick to the essentials; a lawn—the best you can get—and flowers, shrubs and vines. If trees are lacking it takes a stout heart to plant them. They are so leisurely. Be brave. The quicker growing kinds will soon give you pleasure and comfort, and the future is so rewarding that it is worth waiting on. Your motto should be, "Plant as if you expected to live forever, and for your present happiness, plant as if you were going to die next month." Remember "the woods were God's first temples" and their presence aids greatly to the impression of beauty and sanctity of your home.

### Spare That Tree

If a grand old tree grows on what should be your unbroken lawn, your eyes, as well as your heart, will teach you not to destroy one of the noblest and most slowly perfected of nature's works. But if your lawn space has been cluttered up with flower beds by a former resident, don't hesitate to sacrifice them. Transplant what flowers you can, but do not leave them where they disturb the tranquility of the smooth, flat grass.

In order not to break that sacred spread of lawn, the decree has gone forth that the house should be approached from the side. Excellent effects may be obtained by this treatment, but what is sweeter or more reminiscent of the fairy tales of childhood, than the little bricked path, straight as a die, leading up through flowery borders to the rose-embowered porch? Just to enter a hospitable portal by such an approach, prepares the visitor for enchantment within. He expects to find a good fairy in the hostess who welcomes him from the other side of that magic door.

Given good taste, and the simplicity that prevents overcrowding, you will attain a thoroughly pleasing effect. Set shrubs and flowers close around the foundation of your house, along walks and driveways, at the edge of the lawn. Plan a succession that shall bloom throughout the season, and do not forget that evergreens and red berries brighten the darkest winter day.

### HARDY PHLOX

By Sophie Tunnell, Illinois

We have grown hardy phlox for five years and find it the most satisfactory flower we ever had. We started out with two plants, one the white variety, the other pink. After the first year we were able to separate the plants. Then we gathered the seed also. This was sown in a shallow box in the late fall, and was placed on the south side of the house until after a few severe frosts. Then it was brought indoors. By spring we were able to set out these plants.

From our two plants we now have two immense beds of phlox, another bordered with it, while the curve made by the walk from the front door to the back is just a mass of pink phlox.

### A Curious Result

Last spring I planned to have in our flower garden, a bed of pink phlox to be bordered with gray dusty miller. So I transplanted our pink phlox, but lo and behold! when they bloomed they were all white except one very small plant. This year when they bloomed every other one was pink.

From early summer until late fall they bloomed profusely, and as hot as last summer was they still bloomed. Almost all the other flowers suffered from the dry, hot weather, but our phlox was a thing of beauty. Of all hardy plants it certainly is the hardiest and the most satisfactory.

### PICTURESQUE PLOWMEN

In the good old days when Bobby Burns tilled the soil and "walked in glory and in joy, behind his plow upon the mountain-side," it was sufficient unto the farmer to be called an "honest plowman." But behold now, when the plowing is done with a tractor, how the erstwhile humble plowman breaks into high society. Says the New York Advertising Club News, "Out in Detroit they are making up tractors with orchid holders and laprobe rails in beaten brass," and seriously it is pleasing to note that, since the wise farmer refuses to move to the city, so many city conveniences are coming to the farm.



## Bulletins Well Worth Reading

The following Bulletins may be had free upon application:

The Sources of Apple Bitter Rot Infection, Department Bulletin 684, U. S. Department of Agriculture, Washington, D. C.

The Oriental Peach Pest, Bulletin 209, Maryland Experiment Station, College Park, Md.

Apple Bud Selection, Apple Seedlings from Selected Trees, Bulletin 211, Illinois Experiment Station, Urbana, Ill.

Loading American Grapes, Markets Document 14, U. S. Department of Agriculture, Washington, D. C.

Preparation of Strawberries for Market, Farmers' Bulletin 979, U. S. Department of Agriculture, Washington, D. C.

Strawberries, Circular 22, Alabama Polytechnic Institute, Auburn, Ala.

The Seedless Raisin Grapes, Bulletin 298, College of Agriculture, Berkeley, Cal.

Fall Preparations for Spring Gardening, Circular 232, Illinois Experiment Station, Urbana, Ill.

Soil Fertility, Bulletin 220, Agricultural Experiment Station, Manhattan, Kas.

Preparation of Bees for Outdoor Wintering, Farmers' Bulletin 1012, U. S. Department of Agriculture, Washington, D. C.

Wintering Bees in Cellars, Farmers' Bulletin 1014, U. S. Department of Agriculture, Washington, D. C.

Beekeeping for Connecticut, Bulletin 205, Connecticut Agricultural Experiment Station, New Haven, Conn.

Poultry House Construction, Farmers' Bulletin 574, U. S. Department of Agriculture, Washington, D. C.

Back Yard Poultry Keeping, Farmers' Bulletin 889, U. S. Department of Agriculture, Washington, D. C.

Natural and Artificial Brooding of Chickens, Farmers' Bulletin 624, U. S. Department of Agriculture, Washington, D. C.

Natural and Artificial Incubation of Hens' Eggs, Farmers' Bulletin 585, Department of Agriculture, Washington, D. C.

A Simple Trap Nest for Poultry, Farmers' Bulletin 682, U. S. Department of Agriculture, Washington, D. C.

Standard Varieties of Chickens, Farmers' Bulletin 806, U. S. Department of Agriculture, Washington, D. C.

Important Poultry Diseases, Farmers' Bulletin 937, U. S. Department of Agriculture, Washington, D. C.

Attracting Birds to Public and Semi-Public Reservations, Department Bulletin 715, U. S. Department of Agriculture, Washington, D. C.

Chopped Alfalfa vs. Bran in Grain Ration for Dairy Cows, Bulletin 164, Agricultural Experiment Station, Lincoln, Neb.

Suggestions to Beginners for Selecting Breeding Sheep, Extension Circular 26, University of Illinois, Urbana, Ill.

Raising Belgian Hares and Other Rabbits, Farmers' Bulletin 496, U. S. Department of Agriculture, Washington, D. C.

Wintering Dairy Heifers, Bulletin 219, Virginia Polytechnic Institute, Blacksburg, Va.

The Muskrat as a Fur Bearer, Farmers' Bulletin 869, U. S. Department of Agriculture, Washington, D. C.

The Common Mole of Eastern United States, Farmers' Bulletin 583, U. S. Department of Agriculture, Washington, D. C.

Trapping Moles, and Utilizing Their Skins, Farmers' Bulletin 832, U. S. Department of Agriculture, Washington, D. C.

Economic Value of North American Skunks, Farmers' Bulletin 587, U. S. Department of Agriculture, Washington, D. C.

The Domesticated Silver Fox, Farmers' Bulletin 795, U. S. Department of Agriculture, Washington, D. C.

Parcel Post Business Methods, Farmers' Bulletin 922, U. S. Department of Agriculture, Washington, D. C.

Marketing Eggs by Parcel Post, Farmers' Bulletin 830, U. S. Department of Agriculture, Washington, D. C.

Marketing Berries and Cherries by Parcel Post, Bulletin 688, U. S. Department of Agriculture, Washington, D. C.

Storage of Vegetables for Winter Use, Circular 231, University of Illinois, Urbana, Ill.

Use of Dried Fruits and Vegetables, Emergency Bulletin 33, University of Nebraska, Lincoln, Neb.

Preserving Vegetables by Salting, Drying and Storing, U. S. Food Administration, Washington, D. C.

The Gas Tractor in Eastern Farming, Farmers' Bulletin 1004, U. S. Department of Agriculture, Washington, D. C. This valuable bulletin can be had free by writing to the U. S. Department of Agriculture at Washington. It will solve the farmer's doubts as to whether he should or should not invest in a tractor. The disadvantages are pointed out as fairly as the advantages, and the information given is based upon the recent experiences of 250 New York farmers. In the majority of cases it was found that work could not be done more cheaply with the tractor, but that it was done more quickly. As time is often money, tractors using gas or kerosene are increasing in numbers, but it is admitted that not every farmer should have a tractor.

### THE ORCHARD FERTILIZATION QUESTION SUMMARIZED

A most confusing situation, both for the orchardist and for the fertilizer man, is found in the conflicting fertility recommendations made by the various experiment stations.

A number of states have unhesitatingly recommended the use of fertilizer in the orchard, others have hedged, and one or two still maintain (though with waning ardor) that fertilizer is not needed in orchard management.

In view of the above, Mr. Frank H. Ballou's article in the Country Gentleman under date of September 21st, summarizing a number of orchard fertility practices, is especially welcome and valuable. The article while dealing mainly with the relative merits of clean cultivation versus sod orchards throws much direct light upon the possible causes for variations in fertilizer recommendations emanating from different experiment stations.

Mr. Ballou's summary is as follows: Consider, therefore, the result of orchard culture and fertilization experiments on rugged land well and widely represented by that of Southern Ohio, the following propositions are justified by work both finished and in progress:

1. That on orchard areas abounding generously in organic or nitrogenous matter both the tillage-cover crop and the grass-mulch methods—where each plan is faithfully and conscientiously employed—will produce excellent results without manure or commercial plant food.

2. That where the soil, although not really poor, is somewhat deficient in organic matter, tillage with cover crops, for a time at least, without fertilization, will give better results in growth and vigor of trees and a larger yield of fruit than will the grass-mulch method without fertilization, because of shortage of nitrogen under these conditions.

3. That the grass-mulch method, carefully followed, plus fertilization with nitrogenous plant food, will promote as great a degree of growth, vigor and fruitfulness of trees on land somewhat deficient in organic matter as will tillage and cover cropping without fertilization, with the advantage that the grass-mulch plan will permit no further loss of soil or fertility by erosion.

4. That the grass-mulch method, plus fertilization with nitrogenous plant food, not only will produce as satisfactory results in vigorous growth of trees and yield of fruit on thin, poor, steep, unsafely tillable land as will the tillage-cover crop method on safely tillable land of equally thin, poor soil conditions, without fertilization, but is the only scheme of orchard culture that economically can be applied to the more rugged types of land.

5. That the cost of effective fertilization with quickly available nitrogenous plant food for apple orchards on rugged land, even at the present extremely high price of nitrate of soda, as compared with that set over against the cost of tillage on the more safely and readily workable areas in these generally hilly sections is no greater than, if as great as, the tillage-cover crop method without fertilization.

## MYERS Spray Gun

Does Away With All Extensions, Nozzles and Fittings and Utilizes the Entire Capacity of Spray Pump

Lay aside your extensions, nozzles and other equipment, and cut the time and expense of power spraying in two by using a Myers Power Spray Gun.—With it

### ONE MAN

does the spraying instead of two, three or four as formerly—does the work thoroughly and in less time. A single shot to a tree is often sufficient, then you are ready to move on to the next one. The MYERS SPRAY GUN is mechanically correct—a product of experts who have simplified the construction by employing common sense ideas which make it exceptionally easy to handle and operate. One-third turn of handle adjusts the Myers Gun from a broad fan-like spray to a long one for high trees. Each gun is provided with three spray discs—4, 6 and 8 gallons capacity, enabling it to utilize full discharge of any pump. Help is scarce—time is money—Do your spraying single handed next spring by employing this modern and simplified one-man device—the Myers Spray Gun. Information and circular gladly mailed. Ask our dealer or write us.

Catalog showing Myers Spray Pumps for Every Spraying Need—64 pages—free.

**F.E. MYERS & BRO.** NO. 150 ORANGE ST. ASHLAND - OHIO.

## Plan Now for Spring Planting

Planting is the most important step in orchard practice. Take time to work out your orchard planting plan on paper while the evenings are long and the days often stormy. Study the merits of the different varieties in relation to your soil and market. Send for our **free** 1919 Fruit Guide. It gives you reliable information based on nearly 30 years' fruit-growing experience at

**Harrison's Nurseries**

"Largest Growers of Fruit Trees in the World"

All Harrison-grown Fruit Trees—Apples, Peaches, Pears, Plums, Cherries, etc.—are budded from our own bearing orchards. This practice assures high yielding trees of the choicest strains.

We are headquarters for Small Fruits; also for superb Ornamentals: Deciduous and Evergreen Trees, Shrubs and Hedge Plants. We especially recommend Norway Maples and Koster's Blue Spruce for the lawn and Thunberg's Barberry for the hedge.

If planting largely, it will pay you to come to the Nurseries. Anyway, you need our 1919 Catalog. Write today.

**Harrison's Nurseries, Box 52, Berlin, Md.**



Send me your 1918 catalog and the 1919 catalog when ready  
☐ Fruit Trees ☐ Shade Trees ☐ Evergreens  
 Name \_\_\_\_\_ Address \_\_\_\_\_ R. F. D. \_\_\_\_\_ Box \_\_\_\_\_  
 Harrison's Nurseries, Box 52, Berlin, Md.



# SATISFIED USERS wrote this Ad for Us-

Their Experience is worth real Money to YOU!

I have had several spreaders on my farm, but there are none like yours. I could not farm without it. Last fall I put six acres to wheat, first putting on 30 loads of manure. This spring I put on 20 loads more. You just ought to see that wheat. The manure made it stand out very good, and it will give 35 bushels per acre. If I had not used the Spreader this spring I am sure I would not have gotten over 15 bushels. Your spreader is one of the best investments you can put on the farm.

C. E. HUPRICH, Ohio.

I would not be without your spreader, because it saves so much labor, puts the manure on the ground evenly, and I can spread any kind of straw or cornstalks. I believe my spreader will pay for itself in two seasons. With the proper use of manure on my place and using time, I have increased the yield of my farm 25% in six years.

E. M. PHILLIPS, Virginia.

Your Spreader has given entire satisfaction. I can recommend it to anyone needing a spreader. It is the lightest draft spreader I ever used. I handled mine in top dressing corn with two horses and I like it fine.

S. A. WICK, Missouri.

I purchased one of your spreaders eight years ago and it has spread all of my manure from fifty head of stock during that time, and as a labor saver it has easily paid for itself more than five head of stock. I am sure it has saved me more than five head of stock. I cannot afford to be without a manure spreader, unless it is especially good of spreading manure by hand, which I am not.

C. E. HOUGH, Connecticut.

I have owned three spreaders in my time. The first two I didn't think much of. Then I got one of yours and now I am more than pleased with the spreader proposition. I find by hauling manure in the winter time on clover sod and letting the rain wash it down before plowing it under will often double the corn yield or even wheat. Where I used commercial fertilizer and barnyard manure together on 12 acres of wheat last year I got 600 bushels of wheat, an average of 50 bushels per acre. A farmer that owns ten acres can't afford to be without a spreader.

WILL HENSIL, Ohio.

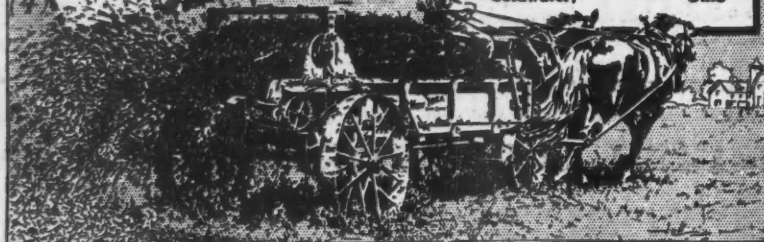
THESE letters answer every question you may have about the New Idea Spreader. We will gladly send you the writers' addresses and copies of similar letters from many others, if you want further proof. These letters, like the New Idea itself, stand every test. They prove that you yourself should have a

## NEW IDEA

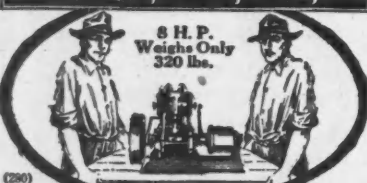
Registered U.S. Pat. Off.

THE ORIGINAL wide spreading spreader that revolutionized old-fashioned methods—that has always been the leader. Has solid bottom with chain conveyors. Pulverizes thoroughly and spreads evenly. Drives with heavy sprockets and chain—no gears. Low down, light draft. Loads and pulls without undue strain on man or team. When you buy insist on the "New Idea"—the machine you are sure of. If you don't know our dealer, we'll send you his name and a copy of a splendid book on soil fertility. Send your name today.

New Idea Spreader Co.  
Spreader Specialists  
Coldwater, Ohio



### Cushman Light Weight Engines



### Easy to Move From Job to Job

Weights Only One-Fourth As Much as ordinary farm engines, but run much more steadily and quietly, like automobile engines. Light weight and higher speed mean more jobs, easier handling and less waste of material and gasoline. 4 H. P. for spraying and other farm work. Easy to mount on wagon with tank, or may be used with any power sprayer. 8 H. P. double cylinder weighs only 320 lbs. Also 15 and 20 H. P. sizes. Ask for book on Light Weight Engines.

Cushman Motor Works, 955 N. 21st St., Lincoln, Neb.

**FREE** POWERFUL AIR GUN AND 500 BUCK SHOTS. Big 21-inch lever-action rifle, one without stock, free for selling 25 beautiful pictures or 25 pigs. Post cards at 10c. Order your chicks. GATES MFG. CO. DEPT. 537 CHICAGO

### Heat and Cook with Oil

Oliver Oil-Gas Burner's Fit Any Stove. Attach to your stove, fill the tank with kerosene or coal oil and it's ready for use. Economical. Cooks and bakes better than coal or wood. Gives more heat. Turns on and off like gas. No fires to start. No kindling, ashes, coal or wood. Saves hours of work daily. Absolutely Safe. Write for FREE literature. Agents Wanted. OLIVER OIL-GAS BURNER & MACHINE CO. 140 North Broadway, ST. LOUIS, MO.

### Solves the Coal Problem

**Beacon Lamp FREE** Lights Your Home Like Day. 100 Candle Power incandescent pure white light from (kerosene) coal oil. Burns either gas or electricity. COSTS ONLY 1 CENT FOR 6 HOURS. We want one person in each locality to whom we can refer new customers. Take advantage of our Special Offer to secure a Beacon Lamp FREE. Write today. AGENTS WANTED.

HOME SUPPLY CO., 14 Home Bldg., Kansas City, Mo.  
**Chickens Sick?—Use Germozone** Respir. cures, bowel troubles, sore head, limber neck, etc. At dealers or postpaid 75c. with book "Poultry Library." GEO. H. LEE CO., Dept. 455, OMAHA, NEB.

## FRUIT TREES and PLANTS of Tried and True Sorts

Millions of such trees are propagated in our 1200 acre nursery. Soil, climate, moisture, skillful culture, put these trees and small fruits in a class rarely approached.

**Apples, Peaches, Plums, Pears, Cherries, Grapes, Bush Fruits, Strawberries**

In the dependable varieties only are listed and described in Our 1919 Catalogue, a book of special value to fruit growers, farmers and gardeners. Complete lists of fruits, shade trees, evergreens, shrubs, vegetable and flower seeds. Send today for a copy.

**The STORRS & HARRISON CO. (28 years in business)**  
Box 653 PAINESVILLE, OHIO

## He Was Caught Red-Handed

By Dr. Walter C. Covey, Michigan

IT WAS not so many years ago that the confidence man, the lightning rod agent and the gold brick manipulator reaped rich harvests of dollars from the inhabitants of the rural districts. Today the greater portion of the farming communities are wise to tricks so hoary with age as the gold brick game, and even the lightning rod agent is obliged to put his work on a scientific basis in order to do business with the farmer. Notwithstanding all this enlightenment, the farmer is still rich picking for the unscrupulous commission merchant.

We farmers have recited again and again our bills of particulars against this system of robbery, but still continue to consign our produce regardless of the almost certainty that we will be victims of robbery, instead of organizing properly to handle the produce ourselves. There are very few reasons why we should give patronage to the middleman, especially when every loophole is open for him to defraud us of our rightful share of the profits. William Heinman made this very clear to the members of the Fairview Farmers' Club a few nights ago when he related an experience as follows:

### Indictment of Commission Men

"I am not prepared to say that there are no honest commission merchants; neither am I prepared to say that there are no angels in Dante's Inferno. I suspect, however, that the one class is about as numerous as the other. As long as the producers patronize those fellows, so long will they increase and multiply and wax fat upon the hard-earned produce from the farming communities.

"The Federal Government recognizes the existence of these bloodsuckers and are grudgingly endeavoring to legislate against them, or trying to do something to compel them to be half-way honest. The farmer will continue to patronize them and continue to be the victim of their thievery, till both the national and state governments shall throw around the producer some legal safeguards that will protect him from the rascals who are growing rich by their stealings from the producing classes.

"We are glad to learn that once in awhile we can find a man who has means, determination and grit to follow up his consignments and call the rascals to judgment.

"The particular case that illustrates what I mean occurred here only a couple of weeks ago, when Mr. Henry C. Boughner consigned 225 bushels of new potatoes and 65 crates of cukes to a commission merchant in Chicago. Each crate contained seven dozen fine cukes, that were quoted in that day's bulletin at from \$4.90 to \$6.65 a crate. The new home-grown potatoes were quoted from \$1.75 to \$2.25 a bushel on that date and the date following.

### Commission Man Caught

"Mr. Boughner, as we all know, is a man of means, and has rubbed up against the world until he has reached a point where he is not a particle afraid to assert his rights, and he absolutely refuses to submit to being waylaid and robbed of the fruits of his toil.

"A few hours after the train that carried Mr. Boughner's consignment left the station, he took the night express for Chicago, where he arrived several hours before the freight train.

"After eating his breakfast at one of the down-town hotels, he hired a taxi and was driven to the office of his consignee, where he posed as a prospective purchaser of potatoes and cukes. Of course he gave a fictitious name, and the commission merchant was all smiles at the prospect of selling large consignments to a cash-paying customer. He informed Boughner that he had a car coming that would be in the yards in a few hours, and that it came from a man in Michigan who never consigned any but prime goods. An appointment was made for 1:30 P. M. to examine the produce.

"Boughner was on hand to meet the engagement, and was taken to the yards and shown the produce he had consigned the day before. The commission man was loud in his praises of the produce and said that he could always depend on getting good produce from Boughner of Michigan. Boughner paid cash for the entire consignment.

ment. He paid \$2.25 for the potatoes and \$6.15 a crate for the cukes.

"In the meantime he had made arrangements for the sale of the produce to another merchant for cash down on delivery; and he had the consignment carted there. He received \$2.20 for his potatoes and \$6.00 for the cukes. He then returned to his hotel to wait till his son back on the farm could send him the invoice, bulletin and check from the commission merchant to whom he had first consigned his produce.

### The Outcome of the Deal

In a couple of days the expected returns came, and Boughner found that his check amounted to \$605.75, instead of \$753.08, which would properly account for the sale of the produce, less the ten per cent commission allowable to the commission merchant. In the letter to Boughner it was claimed that the potatoes fell short nine bushels and that the cukes were much wilted and unsalable as prime goods.

"Boughner's wrath was worked to a high pitch as he caught a taxi and drove to the office of the man who had swindled him. The commission merchant was all smiles over what he supposed would be another fine bargain with a purchaser who pays cash down for what he buys. The smiles were suddenly dispersed when he was informed that it was Boughner himself to whom he had sold the produce, and that Boughner had the evidences of the rascality of the transaction in his pocket. I do not know just what passed between the men for Boughner refuses to tell it; but the commission merchant quickly made out a check for \$297.50 that represented the amount he had cheated Boughner out of and Boughner's expenses since he had left home.

"He gave Boughner a great 'song and dance' about a sick wife and the efforts he was making to keep his son in college, till Boughner, who is a tender-hearted fellow, came near weeping with the rascal who had so unmercifully outdone him. Under the merchant's solemn promise never to do any cheating again like that, Boughner promised to not reveal the merchant's name.

"The last time I had a talk with Boughner about the affair he said that he would not hesitate to send that fellow a consignment, but he had resolved to do his own middleman's work."

The chief difficulty seems to be that the farmers are unwilling to trust each other. It seems impossible for any considerable number of them to hang together in any commercial agreement. In our society here we come the nearest to universal agreement of any I know of, but that there are some who are lured away by promises of higher prices by the commission merchants cannot be denied.

### VARIETIES OF FRUIT MAY BE IDENTIFIED AT EXPERIMENT STATION

Ohio farmers or fruit growers having unknown varieties in their orchards may now send samples of fruits including apples, peaches, pears, plums and berries to the Ohio Experiment Station, Wooster, where identification will be made by horticulturists free of charge. Fruits mailed to the station should be mature and typical of the produce of the trees or bushes and should be accompanied with other information as to bearing qualities, methods of culture and distribution, officials state.

Horticulturists state that approximately 3,000 varieties of apples are now recorded, some having disappeared entirely, but new ones are catalogued continuously. Some nurserymen list 800 varieties, but, taken collectively, the total number runs into the thousands. Practically the same is true for other fruits.

Even though there are so many varieties of fruits, growers are always looking for something new and frequently with apples a new variety is found that meets a particular marked demand, orchardists state. Seedlings of course may never have been named even though the apples from a seedling tree may be of more value than those from a propagated tree. It is shown, too, that when only one tree of unknown apples is found in an orchard it is generally a seedling; while two or three trees of the same kind of apples indicate that the variety has been propagated at some time.





W  
o  
t  
v  
t  
n  
T  
w  
M  
p  
y  
t  
p  
m

pe  
on  
aj  
ye  
ye  
\$i  
ei  
ye

fe  
th  
pe  
re  
m  
du  
ye  
m  
fig  
it  
ho  
vi

be

ev  
be  
ab  
ha  
be  
of  
pla  
ver  
be

get  
hav  
tre  
bee

um  
will  
tisi  
wit  
you  
hav  
sur  
spr  
nea  
this  
is a  
con  
you  
spr  
you  
you  
thin  
oth  
all t  
orch  
use  
Kee  
tion  
you  
thei

Q  
to r  
etle  
A  
CAN  
have  
the  
make  
One  
ever  
App  
Unit  
and  
scrip  
not  
Dr.



# Orchard Problems and Their Solution

By Paul C. Stark, Associate Editor

**Q**—IF AN orchard should be destroyed by fire and the question of damages was being considered, what would you think a bearing apple tree worth?—J. W., Mo.

**A**—The value of an apple tree in the orchard depends to a great extent upon the variety, the age of the tree and the way it has been cared for. Some apple trees this year, in well cared for orchards, are producing from six to eight barrels, netting the owner from \$30.00 to \$40.00. The owner of that tree would consider it worth \$100.00. In 1906, I believe, the Missouri State Horticultural Society appointed a committee and gave them one year in which to report on the value of a tree in the orchard. The committee reported as follows in 1907 at their regular meeting at Carrollton, Mo.:

"We believe the following is a fair and equitable basis for adjusting fire losses in orchards: We value a well grown, thrifty apple tree, after being in the orchard one year, worth 50c; two years, \$1.00; three years, \$1.50; four years, \$2.00; five years, \$3.00; six years, \$4.00; seven years, \$4.50; eight years, \$5.00; nine years, \$5.50; ten years old and over, \$6.00."

As apple trees are generally planted 30 feet apart, requiring 50 trees to the acre, this would make a valuation of \$300.00 per acre for the trees. This seems very reasonable. On the other hand there are many well grown orchards that are producing, at least, \$300.00 per acre each year. In that case trees would be worth more than \$6.00 each, as you can easily figure. However, it is just as stated above, it depends on the condition of the tree, how well it is cared for, and how strong and vigorous it is.

## Cumberland Best Blackcap

**Q**—Do you consider Plum Farmer a better black raspberry than Cumberland?—T. S., Kans.

**A**—I don't believe I would say that I ever saw a black raspberry that I thought better than Cumberland. Plum Farmer is about a week earlier than Cumberland, and hardly as upright in growth. It is a good berry however. Cumberland is my choice of all blackcap raspberries. Kansas is planted to a limited extent, but the universal opinion is that it is inferior to Cumberland.

## Many Good Sprayers

**Q**—Advise me what kind of sprayer to get to spray my young orchard with. I have nearly eight acres of two-year-old trees. What make do you consider the best?—A. S. B., Ill.

**A**—If you will search through the columns of the AMERICAN FRUIT GROWER you will find good responsible houses advertising their spray pumps. Get in touch with them and let each one in turn tell you why their pump is the best. They all have good points. In the first place be sure that your two-year-old trees need spraying. If you find some scale on or near the trees you should only spray for this. If trees are properly sprayed, scale is a very easy pest to control. You should conduct your spraying operations just as you would any other business. Do not spray without an object. If you find that you have a pest or disease of any kind in your orchard, spray for that particular thing, and spray at the right time. Another thing, remember a small sprayer is all that is necessary to handle a very young orchard such as you have. Many growers use barrel sprayers with a hand pump. Keep in touch with your Experiment Station, they will be glad to go carefully into your orchard problems with you. That is their business.

## Information on Varieties

**Q**—Please advise the best book for me to read to inform myself properly on varieties of apples.—J. V. E., Pa.

**A**—In the first place, read the AMERICAN FRUIT GROWER columns carefully. I have found that a horticultural paper is the best investment a tree grower can make, and you should read it religiously. One of the most extensive works of its kind ever published is the "Nomenclature of the Apple," prepared by Prof. Ragan of the United States Department of Agriculture and issued as Bulletin No. 86. The description of varieties in this, however, is not of much value. For the old time sorts Dr. Warder's "American Pomology," and

Downing's "Fruits and Fruit Trees of America" are the best. Thomas's "American Fruit Culturist," Powell's "Orchard & Fruit Garden" and Wickson's "California Fruits" are among the good things that you can buy. Probably the most accurate, most scientific work on the apple, however, is "The Apples of New York," issued as a bulletin from the New York Agricultural Experiment Station and edited by Prof. S. A. Beach, now Professor of Horticulture in Iowa State University. This bulletin is in two large volumes and should be in every fruit grower's library.

## Remedy for Rabbits

**Q**—Is there a wash of any kind, or other remedy, that I can use that will protect my trees against rabbits?—R. A. R., Iowa.

**A**—There are a number of different washes for this purpose and some of them give fair results. However, I believe protectors are better. You can protect your trees by using the spiral wire protector, which is just like a big wire coiled spring, or a small mesh screen wire can be cut to the right size, encircling the tree, leaving an inch or two of space between the tree and wire. Either one of these methods is good. Personally, I don't like a protector that keeps the air and sun away from the trunk of the tree, that is the reason I advise the wire. If your orchard is not too big, and rabbits are plentiful, build a rabbit-proof fence around it. Invite the boys out from town for a day's sport, a shotgun is a good remedy for rabbit trouble.

## Many Soils Good for Cherries

**Q**—On what kind of land should cherries be planted for best results?—C. W., Iowa.

**A**—Cherry trees adapt themselves to almost all soils. One thing is absolutely

soil is dry, and wait until spring before planting though not necessary to dynamite the holes long in advance of planting. The rain and freezes during the winter will cause the ground to settle and there will not be many air spaces. Never use dynamite when the soil is wet. Dynamiting for tree holes is all right, but the tree planter should understand that dynamite is not absolutely essential, for there were many very fine orchards in this country before dynamiting the holes was ever thought of. I believe in the use of dynamite, however, but I have talked with men who thought they couldn't plant a tree unless dynamite was used. In good, loose, porous soil dynamite is generally unnecessary. Where there is a stiff clay subsoil or hardpan I advise it.

## Dyehouse a Fine Cherry

**Q**—What can you tell me about the commercial value of Timme cherry?—T. A., Mich.

**A**—The Timme is of the Early Richmond type; ripens at about the same time and closely resembles it. Some growers in the past have advised planting it commercially, but I would stick to the Early Richmond—or discard both of them and plant Dyehouse. This cherry is a few days earlier than Early Richmond, the fruit will average about the same size, the pit is smaller. Taking everything into consideration I believe Dyehouse is about the best early tart cherry.

## Right Age to Plant Trees

**Q**—Some of my friends advise me to plant one-year apple trees; others say two-year trees are the best. Which do you advise?—O. B., Ind.

**A**—Now, you are trying to get me into trouble, but I am going to side-step and say that one is about as good as the other.



Selecting Prune Trees for France

necessary when you plant cherry trees; they must not be located where the soil is not well drained. Sour cherry, like apple, is a universal fruit and will grow almost anywhere, and in any kind of soil, and will bear in spite of neglect. From your inquiry, however, I presume that you intend to plant a small orchard of cherries, in that case select a well drained piece of land with fairly good soil. Keep your cherry trees about 20 feet apart; this requires 108 trees to the acre.

## Keep Down Pear Blight

**Q**—Would you advise planting pear trees? I notice pears are bringing such excellent prices and I am almost tempted to plant an orchard of them in spite of the blight.—J. A. R., Ill.

**A**—Blight, like the poor, we have with us always. I have noticed that for the last two years there has not been very much damage to pear orchards because of blight. Then again, as a pear grower said to me this past summer: "Blight does some harm, but I keep it cut out and it don't bother me very much." I believe that on the right kind of clay or clay loam you can grow a pear orchard that will pay even if it does blight some. Keep the blight cut out.

## What Time to Dynamite

**Q**—Should I dynamite the holes for my trees this fall if I expect to plant them next spring?—A. C. A., Neb.

**A**—It is a good plan to dynamite the holes in late summer or early fall while the

young and not producing. Leading authorities all over the county are urging intercrops in orchards, and I really believe it helps orchard trees rather than harms them.

The following letter was received from an Illinois orchardist who is a practical business man and has made big money out of the orchard business:

"A young ten-acre orchard for example (not over five years of age) will produce 40 bushels of corn per acre, or 400 bushels for the ten acres, will sell for \$600.00 at the rate of \$1.50 per bushel. If the orchard has been set from one to five years, or one is to be set this year, the grower can do no wiser thing than to plant his young orchard to corn, then cultivate his soil at least four times or more during the season."—K. O. Clark.

Two weeks ago I visited the orchard region of Calhoun Co., Ill. In the orchard of Mr. Jim Nimerick near Hamburg, I saw corn that had made 40 bushels to the acre in a five-year-old orchard of Stark Delicious, Jonathan and King David. The trees were in magnificent vigorous growing condition and were already bearing fruit. This man had combined successfully the profit from his intercrops and from his orchard trees.

## Do Not Wait to Plant

**Q**—Should preparation of the soil of ordinary farm land be begun several years before planting fruit trees (to get a sufficient amount of humus incorporated into the soil) in order to produce best results?—J. E. B., Minn.

**A**—In orcharding, time is the one great consideration. There are not very many men who definitely make up their minds several years ahead of time to plant a certain tract of land to orchard—and then go ahead and handle the soil with the object of preparing it for orchard purposes. The tree planter realizes that he must wait several years before he can expect any returns from his trees, and, after he has made up his mind to plant an orchard, he cannot afford to wait two or three years until he can get the land in perfect physical condition, therefore, he does what I recommend to you: Break and order your land, then plant your trees. While your trees are growing, make any soil corrections that may be needed, and don't forget that there is no better fertilizer for adding humus and plant food than well rotted stable manure and its regular use in the orchard is advised. Cover crops such as clover, cowpeas, etc., will also give excellent results. In most soils lime can be used in connection with the manure and cover crops and there are not many soils which won't show splendid results from the use of lime (ground limestone preferred).

## HAVE AN APPLE ORCHARD

By F. L. Severson, Minnesota

It should be the aim of every person who owns a piece of land to have an orchard. The size should be a secondary consideration, whether it be three or three thousand trees. Let the number depend on the ground you have to spare and the time you have for the care of your undertaking. You may not have much ground, but please do not make the excuse that you have "no time."

Many persons have spare time aside from their regular business or work hours, and a part of this time, applied to orchard work, will bring health, happiness, and a rich reward for every hour spent in so laudable an undertaking.

If you have only enough space for a few trees—then plant. It matters not if the number be very small. It is possible for you to raise many varieties on less than half a dozen trees. After a few years growth a tree may be grafted to produce several different kinds of apples. By this process you will be able to grow a large orchard so far as varieties are concerned.

I have one particular tree on whose branches are borne summer, fall and winter apples. This tree is a worthy representative of something like fifteen kinds of apples.

True it is, a certain amount of care should be given an apple orchard, and it will respond in proportion to this care, but I know of no fruit tree that will put up with the amount of neglect and abuse that an apple tree will and yet return a fair amount of good for a whole lot of evil.



# Moulting Hens and Laying Pullets

By C. A. Langston, Editor "Poultry for Profit" Department

**E**VEN the very best hens have let up on laying. The mature pullets should take the lead for the next six or eight weeks. If there are no mature pullets in the flock there will be very few eggs during the season of highest prices, and poultry keeping will be disappointing

the state of his special market. People who go over the various reports concerning tests, and find that such tests are carried out under exceptional or unusual or unknown conditions, get a little sore. Failure to explain local or special conditions is certain to reduce the value of the test.

at the close of winter will determine the success or failure of the hatching period. Those who have carried over hens should be extremely careful about feeding. The general practice on farms is to feed corn, and corn is fattening. There is always danger of bringing the hens out of the molt too fat. This condition will postpone egg laying, and it will be fatal to many hens. The few eggs that hens in this condition do lay, if incubated, will produce puny chicks.

## Credit Experience of Others

Many find it rather difficult to accept advice that is not altogether convenient or agreeable. Poultry writers of honest purpose try to tell the truth. Knowing the ups and downs of poultry keeping they cannot consistently write if everything is up when they know that some things are almost certain to be down. It is human nature to tell about the hits and to say nothing about the misses. But everybody misses once in awhile. It would be agreeable to learn that every three eggs produce two mature fowls, and that pullets always commence to lay as soon as they are six months old regardless of the date of hatching; that fair egg production may be expected from any method of feeding.

But things do not turn out as we will them unless we will to follow those rules of production which are attested in valid human experience. A lady instructed her colored butler to take the dog out for a walk. Presently she saw the butler crossing the hall. "Have you taken the dog out for a walk?" "Yes, mum," the butler

## KEEP CHICKENS AMONG PLUM TREES

By Lewis Hillara, Kansas

Plums and chickens are perfectly adapted to be kept together. I have done this successfully and one year I added a few swarms of bees to the plant. All worked together in harmony.

Range is necessary for poultry and this can be furnished just as well by a plum orchard as any way. The poultry will benefit the plums by enriching the soil and by keeping down the curculio, while the plums will furnish shade for the chickens and insects as well.

Plums will stand pretty rich soil, and the poultry droppings will bring it up rapidly. Then, if the soil is stirred as it should be to keep down poultry disease, the trees will be kept partially cultivated while the scratching of the poultry will make much cultivating unnecessary. Some kind of seeds can be sown to sprout and furnish green for the chickens, or the orchard can be fenced into two parts and one used as range, while the other is being allowed to grow a crop of green on which the chickens can be turned while the first range is being sown.

## Chickens Kill Curculio

All this benefits the plums, but during the early summer it is best to give the chickens full range in order to keep the curculio. These crawl up the trees and they will not get a chance to do it if the chickens are there. I know this to be a fact because of our own experience. We have never sprayed, though we had a good ser, apaynd loaned it to neighbors to spray their plums, and we had more and better fruit than they. Unsprayed trees outside the chicken yard stood little chance of producing any fruit because of the worms.

We used Japanese varieties almost all together in our lot, but any plums will be benefited by having the poultry ranging among them. I believe the Wild Goose and other native varieties are more apt to be wormy under ordinary conditions than the Japanese, at least it seemed so with us. An Earliana grew in a neighbor's yard and it had few good plums on it at any time, though the blooms covered the tree, and there were fallen fruits under it always from the time the little plums began to get any size.

Sometimes it might be necessary to scatter wood ashes over the soil freely to prevent the trees growing too much soft wood at the expense of the fruit, for the manure from the poultry does not contain much potash, nor does it have phosphorus to balance. If phosphate is used on the farm, some should be given the plum orchard, and if not, a little bone meal will not cost excessively. Five hundred pounds would be a good dressing for an acre, and, as the ashes and bone meal contain lime, they will help to correct the acidity that heavy manuring causes.



Children Feeding White Leghorns and Barred Rocks

to those who have not hatched and raised in accordance with the rules of correct poultry management.

The annual complaint about not getting eggs for Thanksgiving and Christmas is due chiefly to annual mismanagement. If the spring hatching is not related to the plan of raising mature pullets for fall and winter laying, the fall pullets will be either growing or commencing a mild molt. In either case the egg basket will be practically empty. Success and profit are the rewards of those who plan the spring hatching so as to have mature pullets for fall and winter laying.

## Experiments with Laying Hens

A poultry club agent has given the general public the benefit of an experiment with laying hens to determine the cost per dozen of producing eggs. The test commenced November 1 and ended April 17. The best pen made a record of 63 per cent production, producing eggs at a feed cost of 19 cents per dozen. The lowest pen made the low record of 37 per cent production at a feed cost of 36 cents per dozen. The average feed cost for a dozen of eggs was close to 30 cents. All the tests showed that beef scrap was the determining factor of profitable production. The best pen received a dry mash that carried 20 per cent meat scrap. The results of this test with respect to the place of meat scrap in the dry mash is in line with many other tests carried out at state experiment stations and egg-laying contests.

## Cost of Feed Used

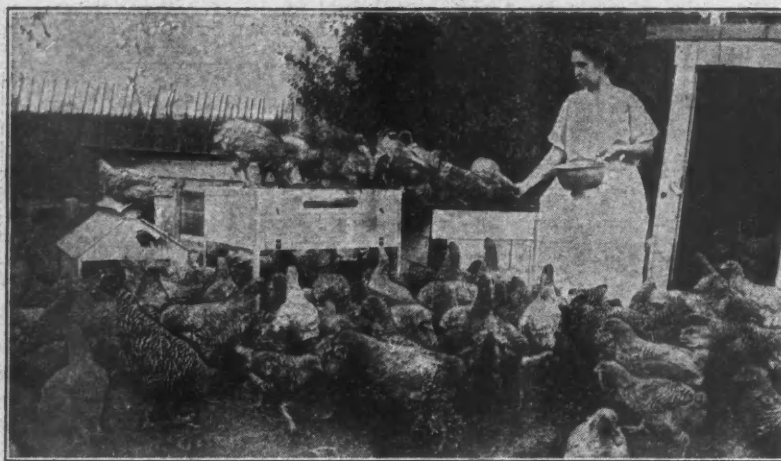
If grains and mashes could be had for \$2.00 per hundred weight their consumption by non-producing fowls would be unprofitable. But if the fowls are laying even fairly well through the period of high prices for eggs, the cost of the feed they consume is a relative matter. With eggs selling at five cents each there is profit in keeping pullets with feed at five cents a pound if the pullets are laying well, say 40 per cent. Feeding cost is a continuous cost; egg production may or may not be continuous. Good management undertakes to do everything that the best poultry experience advises to insure egg production through the period of high-priced eggs, which is also the period of high-priced feeds.

This question of feed costs was discussed last month. It will be recalled that a reader of these columns had access to an exceptional market both as to cost of feeds and the price received for eggs. The poultry agent whose experiments are noted this month is equally fortunate as far as his feed market is concerned. He reports a price of \$3.55 for meat scrap. The lowest public quotation available at this office is \$5.25 per hundred.

This agent would have augmented the value of his report if he had only explained

## Egg and Poultry Market

Present prices for eggs and poultry are exceptionally high. When every cackle has the ring of a nickel or more, the poultry keeper's mind is not worried by feed costs, provided, and this proviso must be sup-



My Chickens at Feeding Time

plied in every statement concerning poultry keeping for profit, provided the pullets are laying.

Despite the reports from the great collecting stations of heavy receipts throughout the storage season, fresh gathered eggs are in strong demand. A price forecast of \$1 per dozen has been made. As many local markets are paying 56 cents to producers, it is quite probable that these country people will receive 70 cents before the drop comes in February.

## Trap Nests

The subject of the use of the trap nest is undoubtedly receiving the attention of many progressive poultry keepers. They are coming to understand that the trap nests stands to poultry keeping as the butterfat tests stands to dairying. Farmers' Bulletin 682, United States Department of Agriculture, Washington, D. C., deals with the subject of trap nests for practical poultry keeping. A design for a three-compartment nest is shown. Anyone who is handy with tools can make these nests at a trifling cost for materials.

## Looking Ahead

The hatching season is not so very far away. As every poultry operation is directly and vitally—or should be—related to all other practices, it is worthy of note that the quality and condition of the stock

replied, "took him out but he wouldn't follow." The lady answered, "You take that dog out doors. If the dog will not follow you, you follow the dog."

Every poultry keeper must follow the hen.



Turkeys and Leghorns are a Profitable Crop



# 160 HENS- 1500 EGGS

**A**S AMERICA'S foremost poultry expert I predict that eggs are going to retail for a dollar a dozen this winter. Right now the retail price is from 50c to 75c per dozen in some of the large cities. At a dollar a dozen poultry raisers are going to make tremendous egg profits. You, too, can make sure of a big egg yield by feeding your hens a few cents' worth of "More Eggs" tonic. This product has been tried, tested and proven. It is acknowledged the best and most successful egg producer on the market today. Every day that you don't use it means that you are losing money. Don't delay. Start with a few cents' worth of "More Eggs" tonic now.

## Got 117 Eggs Instead of 3

That's the experience of one poultry raiser who wrote me. A. P. Woodard of St. Cloud, Fla., writes: "I get from 40 to 50 eggs a day now. Before using 'More Eggs' I was getting only 3 or 4 eggs a day." Here are the experiences of a few others of the hundreds who write me:

### "160 Hens—125 Dozen Eggs"

E. J. Reefer: I have fed two boxes of More Eggs Tonic to my hens and I think my hens have broken the record for eggs. I have 160 White Leghorns and from March 25 to April 15 I sold 125 dozen eggs. Waverly, Mo. MRS. H. M. PATTON.

### "15 Hens—310 Eggs"

E. J. Reefer: I used your More Egg Tonic and from December 1 to February 1, from 15 hens, I got 310 eggs. Your remedies are just what you claim them to be. Turner Falls, Mass. MRS. C. E. STOUTGTON.

### "More Than Doubled In Eggs"

E. J. Reefer: I am very much pleased with your "More Eggs" Tonic. My hens have more than doubled up in their eggs. Mendon, Ill. L. D. NICHOLS.

### 126 Eggs In 5 Days

E. J. Reefer: I wouldn't try to raise chickens without "More Eggs" which means more money. I use it right along. I have 33 hens and in 5 days have gotten 126 dozen eggs or 126. Salina, Okla. MRS. J. O. OAKES.

### "48 Dozen in One Week"

Dear Mr. Reefer: I can't express how much I have been benefited by answering your ads. I've got more eggs than I ever did. I've sold 48 dozen eggs last week, set 4 dozen, ate some and had 1 1/2 dozen left. Woodbury, Tenn. From your friend, MRS. LENA McBRON.

### "Selling Eggs Now"

E. J. Reefer: I was not getting an egg when I began the use of the "More Eggs" Tonic. Now I am selling eggs. Hebo, Oregon. MRS. J. F. BRINK.

### "Gets Winter Eggs"

E. J. Reefer: It is the first time I got so many eggs in winter. When I began using "More Eggs" I was only getting from 1 to 3 eggs per day and now I am getting 11 to 13 eggs per day. Wilburton, Kan. MRS. JULIA GOODEN.

### 16 Hens—12 Eggs a Day

E. J. Reefer: Six weeks ago I began giving "More Eggs" Tonic and I was not getting an egg from 16 hens, and now I am getting 12 every day. You can quote me as saying that it is the best chicken tonic in the world. Luray, Va. R. L. REYNOLDS.

### "37 Eggs a Day"

E. J. Reefer: Six weeks ago I began giving "More Eggs" Tonic and I was not getting an egg from 16 hens, and now I am getting 12 every day. You can quote me as saying that it is the best chicken tonic in the world. Elwood, Indiana. EDGAR E. J. LINNIGER.

### "Increases from 2 to 36 Eggs a Day"

E. J. Reefer: I am well pleased with your More Eggs Tonic. I was only getting 2 or 3 eggs a day, now I am getting 36 dozen a day. Yours truly, WM. SCHMIDT. Sandy Bend, Kansas.

### "Doubles Egg Production"

E. J. Reefer: I have been using More Eggs Tonic 3 or 4 weeks and must say it is the best egg tonic I have ever used. Since I began the use of your More Eggs Tonic 3 weeks ago I am getting 46 eggs a day, and before I was only getting 2 or 3 a day. Paradise, Texas. J. C. KOENIGER.

### "Increases from 2 to 45 Eggs a Day"

E. J. Reefer: I have been using More Eggs Tonic 3 or 4 weeks and must say it is the best egg tonic I have ever used. Since I began the use of your More Eggs Tonic 3 weeks ago I am getting 46 eggs a day, and before I was only getting 2 or 3 a day. Dora Phillips. DORA PHILLIPS.



## More Eggs Makes Layers Out of Loafers!

This is a concentrated tonic, not a food. It consists of every element that goes toward the making of more eggs. A perfect regulator, aids digestion, stimulates egg production and builds firm bones and strong muscles. The foremost authorities in America and poultry raisers from every state endorse Reefer's "More Eggs" tonic.

## Results Guaranteed!

Here is the facsimile of the guarantee of a million dollar bank that "More Eggs" will produce results. The million dollar bank guarantees to refund your money if you are not satisfied. You run no risk. So don't delay. Every day you wait you are losing money.

## Order Today

Send a dollar today for a full-sized package of "More Eggs" tonic, or better yet send \$2.25 at extra special discount, and get three packages. Three packages is a full season's supply. Don't put it off. Order now and start your hens making money for you. Remember, you run no risk. A Million Dollar Bank will refund instantly if you are not entirely satisfied. If you don't order your More Eggs now at least mark on the coupon for Mr. Reefer to send you, ABSOLUTELY FREE, his valuable poultry book that tells the experience of a man who, himself, has made a fortune and is helping others to make money out of the poultry business. Act NOW. Don't wait. Pin a dollar bill to the coupon. Or send \$2.25 which will guarantee your winter's egg supply. Send for this bank-guaranteed egg producer NOW. Today! It has helped thousands of others and will help you, too.

**E. J. Reefer, 4229 Reefer Bldg., Kansas City, Mo.**

## A Million Dollar Guarantee

Absolute Satisfaction or Money Back

### National Bank of the Republic

CAPITAL \$500,000.  
RESERVE AND PROFITS \$100,000.  
KANSAS CITY, MO.

#### TO WHOM IT MAY CONCERN:

I hereby guarantee that Mr. Reefer will carry out his agreement \*\*\* and this bank further agrees to return to the customer the total amount of his remittance, if Mr. Reefer fails to do as he agrees.

Very truly yours,

*E. J. Reefer*  
President.

**E. J. REEFER,**  
4229 Reefer Bldg.,  
Kansas City, Missouri

Enclosed find \$..... Send at special discount price, with all charges prepaid, ..... packages of More Eggs Tonic. Send this with an absolute Bank Guarantee that you will refund all my money if this tonic is not satisfactory to me in every way.

Name .....

Address .....

IMPORTANT: If you don't want to try this Bank Guaranteed tonic, at least mail the coupon for my Free valuable poultry books FREE.





## IRONCLAD KHAKI

(Twill Cloth)

Jackie Sam's Boys and Girls both wear garments of

### IRONCLAD KHAKI

the patriotic economy cloth. It's fast color—can't fade and wears like leather. Be sure the Ironclad "Army" label and Guarantee Bond are sewed in every khaki work shirt, pants and overalls you buy. *Garments on sale by dealers—everywhere.*

Write for free samples of Ironclad Khaki Cloth and Miss Ironclad Khaki Cloth to

**FRANKLIN MANUFACTURING CO.**  
Manufacturers of Cloth Only  
101 Market Place — Baltimore, Md.

## More Chicks

### GET JOHNSON'S BOOK

This book marks our 25th year making incubators and gives you the cream of our experience with poultry. Send for a copy and get my offer on

### Old Trusty

Shipped freight or express prepaid. Make a big income with Old Trusty. This year, 500,000 owners. Big average hatches even in cold wet weather.

Write today.  
J. A. Johnson  
Incubator Mfg.  
M. W. Johnson Co.  
Clyde Center, Neb.



Tell Me Your Old Trusty

### Useful Service Table-Wagon

It serves your home, serves your time—That is Practical Economy



Largest Broad White Table  
Top—Removable Glass  
Serves 12—800 lbs. Capacity  
Large Deep Under-shelves—Scientifically  
Designed—Rubber Tired  
Steel Wheels.

A high grade piece of furniture surpassing any other in the market. One of the best values in the line. Write now for descriptive pamphlet and dealer's name.

**Combination Products Co.**  
131 Tower Bldg., Chicago

### SAVE THE TREES

Kill San Jose Scale, Aphid, White Fly, etc., by spraying your trees with

### GOOD'S CALCASTIC FISH OIL SOAP No. 3

Sure death to tree pests. Contains nothing injurious to trees—fertilizes the soil. Used extensively by U. S. Dept. of Agriculture.

One valuable book on tree and plant diseases. Write for it today.

**JAMES GOOD, Original Maker, 2111 - 15 E. Sacramento Ave., PHILA.**

Saccharin is 16 times sweeter than sugar. For sweetening tea, coffee, or baking, gives same results, is cheaper and more healthful than sugar. Send 10c for sample package and booklet. Address Elliott Company, Manistique, Mich.—Advertisement.

## FREE \$20

Violin, Hawaiian Guitar, Ukulele, Guitar, Mandolin, Cornet or Banjo

Wonderful new system of teaching note made by mail. To first pupils in each locality, we'll give a \$20 superb Violin, Mandolin, Ukulele, Guitar, Hawaiian Guitar, Cornet or Banjo absolutely free. Very small charge for lessons only expense. We guarantee success or no charge. Complete outfit free. Write at once—no obligation.

**SLINGERLAND SCHOOL OF MUSIC, Dept. 736, CHICAGO, ILL.**

### Comfort Indoor Closet

Odorless—Sanitary—Germ-Proof

Every home without sewerage, plumbing or running water needs one. Anyone can install. Placed in any room in house. 10,000 in use.

**U. S. HEALTH BUREAU APPROVED**

Steps: "Chemical Closet" provides with requirements. "Aromatic cold outdoor closet." "Carpenter's closet." "State Board of Health endorse it. 10,000 in use. AGENTS everywhere. Exclusive territory. CATALOGUE FREE. Comfort Chemical Closet Co. 10013 Factory Bldg., Toledo, O.



## Some Good Books

Orchard and Garden, by Benjamin Wallace Duncan

A book-lover would wish to possess this volume simply for the unusual beauty of its illustrations and the admirable, clear printing of its 860 pages, which afford to expert and amateur alike, most valuable knowledge. The title, "Orchard and Garden," tells of the several interests to the fruit grower, to the vegetable gardener and to the flower gardener. It will prove not only a delight to the farm home maker, but an inspiration to city dwellers who may be hesitating about starting a little rural paradise of their own. Published by Federal Publishing Company, Indianapolis, Ind.

The Home Fruit Grower, by M. G. Kains

This is one of those excellent little volumes which we take pleasure in calling to the attention of our readers. If you will study this small book, you will almost certainly be persuaded to join the ranks of the home fruit growers, and they are a happy band. A delightfully illustrated treatise of over 200 pages, written by an experienced grower and lover of fruit, and beyond everything, practical.

Published by A. T. Delamare Company, 448 W. 37th St., New York City, and can be bought from the AMERICAN FRUIT GROWER for \$1.00.

### Productive Sheep Husbandry

This will prove very profitable reading for the beginner as well as for the experienced sheep man. The keeping of sheep is looked forward to as one of the most profitable enterprises for the future.

Published by J. C. Lippincott, Philadelphia, Pa., and can be bought from the AMERICAN FRUIT GROWER for \$2.25.

### The Farmer His Own Builder

The title of this new book suggests that it comes with peculiar opportuneness at this time, when high prices make it almost prohibitory for farmers to add to the farm buildings. Every thing that the farmer wants to know on this subject is contained in the fully illustrated 300 pages. No matter how ignorant you may be of the technicalities of building, you will find your problem solved here by accurate figures as to amount and cost of materials, plans for buildings and the use of concrete in every form.

Published by David McKay, 806 South Washington Square, Philadelphia, Pa., and can be bought from the AMERICAN FRUIT GROWER for \$1.25.

### The Book for Butter

This book treats of every process from the time of milking until the product is on the market. It contains 270 pages with many illustrations.

Published by the McMillan Co., 66 Fifth Avenue, New York City, and can be purchased from the AMERICAN FRUIT GROWER for \$1.75.

### Farm Knowledge

"Farm Knowledge" is just what its title implies—knowledge that the farmer ought to have, and if he studies these books he will have it, for "Farm Knowledge" is designed as a practical encyclopedia for the farm. It appears in four large volumes, profusely illustrated. Vol. 1, "Farm Animals, Their Care and Diseases." Vol. 2, "Soils, Crops, Fertilizers and Methods." Vol. 3, "Farm Implements, Vehicles and Buildings." Vol. 4, "Business Management and the Farm Home."

When you have these volumes on hand there are very few questions relating to farming to which you cannot find a ready and reliable answer written by the very best men on that particular subject. "Farm Knowledge" is in itself a fairly complete library for the farm home.

Published by Sears, Roebuck & Company, Chicago, Ill.

### CANADA ADOPTS STANDARD APPLE BARREL

At a recent meeting of Canadian fruit growers standard dimensions and forms for fruit packages were recommended for use in Canada. For barreled apples, a barrel similar to the United States standard was adopted, namely 17½-inch head diameter, 28½-inch stave, 26 inches between heads, 64-inch circumference at bulge; capacity 7,056 cubic inches.

## GETTING READY TO TRAP

In going out on any trapping expedition the trapper should use good judgment in deciding how many traps he shall take with him. This depends on his facilities for carrying and tending to the traps. Over a given territory one man can tend between one hundred and two hundred traps, but this is supposing he can set them out a number at a time and does not have to carry all at once.

If the trapper intends going into a new section and must carry all his traps along with his other camp necessities, he should not attempt to take more than eighty small-to-medium sized traps with him. Should he be trapping on streams where he travels by boat, or in a country where he travels by horse and wagon, it is efficient for the trapper to take all the traps he can tend.

### Buy Best Traps

Traps are perhaps the most important part of the trapping equipment. In selecting them, the light, strong ones should be chosen. The "quality" trap is always a better purchase than the "cheap" trap, for the cheap trap breaks easily or gets out of working order and loses many valuable furs which the better trap catches.

Every trapper should provide himself with the right kind of scents to bait for the different animals he is going after. These animal baits, to be obtained from the big fur house, greatly increase the effectiveness of the set. Every trapper's equipment should include a good smoker to drive animals from their dens. When animals den up in good number, they are easily caught and killed by smoking them out with an efficient smoker.

Good stretchers are necessary for properly preparing fur catches for the market. All other equipment for outdoor life will be found useful in trapping—knives, lamps, heavy clothing, guns, etc. It is a proven fact that the well-equipped trapper, whether he be boy or man, makes much more out of the business than the one who uses haphazard methods.

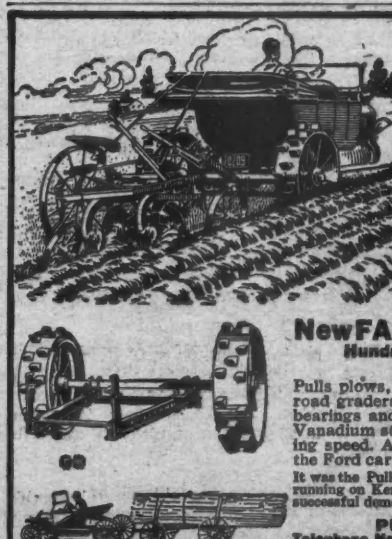
## GET MORE EGGS ON LESS FEED

Egg prices this winter will undoubtedly be the highest in the world's history. Those who know how to feed to get winter eggs will reap enormous profits, while improper methods mean a loss.

Prof. T. E. Quisenberry, one of the world's greatest poultry authorities and President of the American Poultry School, Box 84, Leavenworth Kansas, has issued a 16-page bulletin on "How and What to Feed for Heavy Egg Production and to Cut the Cost of Feed." This Bulletin will be mailed Free to interested readers, while they last. Hundreds of hens fed and cared for under Prof. Quisenberry's direction have laid 200 to 298 eggs per year, while the normal production according to U. S. Government reports is 60 to 80 eggs per year. Write today for your copy of this valuable Bulletin.—Adv.

## GET OUR "PEACE" PRICES ON "Successful" INCUBATORS & BROODERS

Mail a postal—Get our offer. Poultry lessons free to every buyer. Booklet, "How to Raise 48 Out of 80 Chicks," 10c. Catalog FREE. Make green, egg-making feed in "SUCCESSFUL" Grain Sprinkler. **DES MOINES INCUBATOR CO.** 16 Second St., Des Moines, Ia.



## American Fruit Grower

### BIENNIAL BEARING

In a recent article in Country Life it is maintained that the intermittent bearing of fruit trees can be avoided by a proper system of manuring. The writer, H. Vendelmans, says: "In spite of a very common belief, it is certain that the bearing capacity of fruit trees is not limited to every other year. Ninety-nine orchardists out of every hundred in England assert that a good crop is followed by a thin crop, and vice versa, but the regularity with which excellent returns are obtained annually from espalier trees and trees under glass, which receive different treatment from that meted out to orchard trees, ought to suggest some scepticism about the old tradition. In the case mentioned, it is possible to rely on good crops every year."

"Among the reasons which explain this more regular bearing, manure takes a first place. Without it, the abundant crop of one year makes so great a demand upon food that the reserves of the trees are exhausted, and are not strong enough to feed a new crop for the next year. Hence a poor return follows a good return. In the year following the bumper crop, the trees often carry no fruit at all, but they accumulate new reserves, and are then ready to feed a large crop the next year. When the exhaustion of the trees is prevented by appropriate manuring, bearing takes place more regularly."

## NO MORE PUNCTURES OR BLOWOUTS

Perfect Tire Filler Takes Place Of Air — Sent For Free Trial to Car Owners.

Car owners can get immediate relief from punctures and blowouts and from the delay, danger and expense of air-filled tires by writing to J. A. Jonson, Sales Mgr., No. 67-220 W. Superior St., Chicago.

Mr. Jonson's company manufactures a tire filler (not a liquid) that is in successful use on over 50,000 cars. This solid resilient filler rides like air yet does not puncture or blow-out, doubles the life of tires and does away with the use of inner tubes. No spare tires or rims are needed.

Tests made by the Ford Owners Club, Widney Resiliometer, Technical Universities and over 50,000 users prove that this remarkable tire filler rides like air over the roughest roads, that it will not flatten and that it is not affected by heat, cold, water, sand, mud, or pressure.

Various departments of the Government, Municipalities like Cleveland, Chicago, and 50,000 others are using this filler with remarkable success.

Mr. Jonson's free advertising offer is intended for one car owner in each locality, who will test this tire filler at the manufacturer's risk, and then tell others of its wonderful merits. It is suggested that car owners write Mr. J. A. Jonson, Sales Manager, at the address above for details of his offer.—Adv.

## Plow and Pull

With Your **FORD** All That 4 Horses Can Pullford \$155 F. O. B. Quincy, Ill.

**MAKES** a practical tractor out of a Ford or most any other car. Easily attached to or removed from the car in thirty minutes. No holes to drill, no springs to remove. Practical, Durable, Reliable.

### New FAN DEVICE Prevents Heating Hundreds WORKING NOW for Satisfied and Enthusiastic Owners

Pulls plows, harrows, drills, mowers, binders, hay loaders, road graders, wagons, trucks, etc. Steel wheels with roller bearings and tires 10 inches wide, two pairs of hardened Vanadium steel pinions, one for plowing and one for hauling speed. A tractor with the reliability and durability of the Ford car. Prompt shipment. Write for catalog.

It was the Pullford attached to Ford cars pulling two 12-inch plows running on Kerosene, equipped with new fan device, that made a most successful demonstration at Fremont, Nebraska.

**PULLFORD COMPANY, Box 24C**  
Walton Heights, QUINCY, ILLINOIS  
Telephone No. 84

Kindly Mention American Fruit Grower when writing to Advertisers



is  
of  
er  
f.  
y  
r-  
co  
ts  
rt  
a  
n-  
er  
nt  
nt  
ld  
is  
r.  
is  
st  
of  
on  
k-  
ed  
a

es  
r-  
ly  
on  
y  
ce

S  
e

om  
y.  
ng  
W.  
ire  
on  
ler  
w-  
ay  
or

ney  
ver  
ler  
it  
at,

nt.  
nd  
ble

led  
est  
nd  
is  
on.  
ails



D

T

manage  
the  
of much  
winter  
varieties  
diseases  
remitt  
nection  
varieties  
richly  
care  
than  
addition  
after

How  
apples  
throw  
storage  
it has  
pected  
through  
low?  
enough  
it often  
ders w

After  
only a  
rots w  
will be  
sometimes  
soften  
of ver  
the sun  
abund  
are ea  
spread  
are for  
they h  
cannot  
minati  
starts.

Dise  
fect of  
necess  
against  
farmers  
"drops  
grade  
comm  
ing o  
month

Star  
certain  
ful fruit  
er tem  
possibl  
ture i  
strang  
similar  
ide giv  
apple  
"scald  
course  
cellars  
should  
by ke  
night  
weath  
the pr  
operat  
windo  
condit  
many  
for the  
in, or

Out  
to do,  
bitter  
are tre  
and w  
lime-s  
do it.  
advan





## DISEASES OF FRUITS & TREES

### December: Under Cover And in the Open

By A. S. Colby

**T**HRIFTY AMERICAN FRUIT GROWERS readers who have carefully followed the best practices in orchard management the past year, are now enjoying the fruits of their labors. It is a source of much satisfaction to be able to store for winter use a plentiful supply of several varieties of apples free from insects and disease, a reward for painstaking and unremitting use of the spray outfit in connection with orchard sanitation. Winter varieties of pears are less widely known but richly deserve more general use, no more care being necessary in their production than apples, while they furnish a valuable addition to the list of fresh fruits available after Christmas.

However, no matter how carefully the apples and pears are grown, it is labor thrown away if the fruit goes into winter storage bruised by careless handling after it has left the tree. How can apples be expected to keep when run down a chute through the cellar window to the bin below? Such a practice is not even good enough for self-respecting potatoes. Yet, it often occurs, and then the owner wonders why his apples do not keep.

#### Store Only Perfect Fruit

After the skin of an apple is broken it is only a question of a few days before various rots will set in, chief of which at this time will be found soft rot, or bin rot as it is sometimes called. It is evidenced by the softening of the flesh and the appearance of very numerous tufts of green mold on the surface. Spores or seeds are produced abundantly from these green tufts which are easily carried about in the air and spread the disease rapidly. The spores are found almost everywhere, and when they light upon bruised fruit, vegetables, canned goods not tightly sealed, etc., germination is at once effected and growth starts.

Diseased apples in a barrel will often infect others nearby. It should hardly be necessary in this connection to warn against the all too common practice of farmers in putting several barrels of "drops" or otherwise bruised and second-grade fruit in the cellar for winter use. It commonly results in the necessity of carrying out barrels of rotten apples a few months later.

Starting then with good fruit, there are certain well defined conditions for successful fruit storage. Some of these are a proper temperature, as near 32° Fahrenheit as possible, enough but not too much moisture in the air, and good ventilation. Strange as it may seem, an apple breathes, similarly to animals, and the carbon dioxide given off must be carried away or the apple suffers. This is one cause of fruit "scalding" in cold storage. This danger, of course, will not be found in many house cellars, but, nevertheless, good ventilation should be arranged for. This can be done by keeping the cellar windows open at night and closed in the daytime till the weather becomes too severe to continue the practice every night with safety. The operation may then be reversed, opening windows on sunny days when the outside conditions are favorable. There are too many ill-ventilated house cellars, either for the good of the fruit, etc., stored therein, or the occupants of the house above.

#### Outside Work

Out-of-doors there is still possible work to do, especially if the weather is not too bitterly cold and there is no snow. There are trees to prune and brush to haul away, and where the orchardist makes his own lime-sulphur, December is a good time to do it. Some spraying can also be done to advantage this month.

There are many different formulae for the making of homemade lime-sulphur, which can be secured by writing to the various State Experiment Stations. In some cases the formulae seem better adapted to one location than another because of varying climatic conditions. Though the operation is somewhat dirty and disagreeable, it will pay the large orchardist to make up his own stock solution which he can keep through the year and dilute when wanted. The man with a few acres, however, had better buy the commercial make. The editor will be pleased to send names of responsible spray material manufacturers, if desired, to subscribers. Do not fail to read carefully the advertisements in the AMERICAN FRUIT GROWER.

#### Reasons for Fall Spraying

In some parts of the country, the dormant spray for insects and fungous diseases can very well be applied at this time. In cases where pruning should be done before spraying, this may not be as good a time to spray as in spring. However, there are certain reasons for spraying now. In the case of the peach leaf curl, a very serious disease often found on the peach tree in spring, experiments have been carried on, especially by Cornell University Experiment Station, that seem to point to the advisability of applying a spray in the fall.

The spores of the disease live over winter around the bud scales of the peach. The function of the spray is to kill these spores before they start to infect the young leaves as they push out in spring. Ordinarily, a very early application of the dormant strength lime-sulphur in spring will control the disease easily. However, it sometimes happens that a very early spring causes such rapid opening of the buds that it is impossible to get the spray applied in time, especially if the ground is yet too soft for the spray rig.

In this case it would have been easier and more certain to have applied the spray in the fall, so it is generally recommended where convenient to follow that practice.

#### Question

Q.—Will apples which have transparent cores be unsafe to eat? Will they spread the disease to other apples near them in a cellar? MRS. J. A. MCG., Michigan.

A.—Your trouble is not a disease in the sense that it is caused by fungi. It is brought about by abnormal water relations and is called "water-core." While not thoroughly understood, it is thought to be due to an excessive water supply being brought to the fruit upon the tree, which the fruit cannot use up fast enough in ordinary ways, resulting in storage of a part of it in and about the core. Young, vigorous trees just coming into bearing often show this trouble, as well as trees losing their leaves in midsummer.

Recommendations: Practice good drainage. Keep foliage in good condition. Do not allow the fruit to hang on the trees too long.

It will not affect apples nearby in the cellar.

The thought that we have only a little way to go together should make us very kind and considerate of those we love, and very patient and forbearing to those around us who are unreasonable and unlovable.

The black apes of Guinea have long, silky hair, and their fur is used for muffs and capes. It is said that during the last few years, 7,750,000 skins have been shipped to Paris.

## 18 Years Back of Hardie Sprayers

### High Pressure, Light Weight, Large Capacity, Powerful Engine, Perfect Agitation, Simple Construction

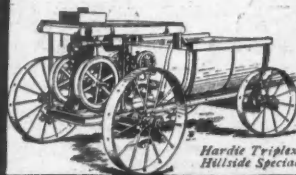
Hardie Power Sprayers are the final word in sprayers. They represent not only years of experience, but also an accurate knowledge of spraying needs and the conditions that govern spraying. Where spraying is most difficult you will find Hardie machines in the majority.

Hardie Sprayers are noted for their simplicity. No complicated devices to cause trouble when every spraying minute counts. You can put any of the help to work with a Hardie and get maximum results. Makes the work of spraying easier than ever before.

When you see a Hardie Sprayer you will readily understand its superiority. See how compact it is—the few working parts and how everyone of them is quickly accessible. There are 21 Hardie features that make it the leader among sprayers. The Hardie catalog tells all about them. A copy is yours for the asking. Send to day. You can see a Hardie at your dealer's.

### Hardie Orchard Gun \$1200

The latest Hardie device made to improve spraying conditions, shoots a cloud of penetrating spray, covers the trees with a fog. Easy to handle. Takes a tiresome load off the arms and does the work in much less time. Fits any high pressure sprayer and increases its efficiency.



Order a Hardie Orchard Gun from your dealer or direct from us. Money back if not satisfied.

The Hardie Manufacturing Co.  
Hudson, Mich.

Branches in Portland, Ore.; Kansas City, Mo.; Hagerstown, Md.; Brockport, N. Y. (1)

# \$900<sup>00</sup>

## Orchard Sprayer

THE WONDER OF THE AGE

(A "Friend" Product)

FOR FAST WORK IN  
LARGE ORCHARDS

SELLING NOW

Same Style Made Smaller—  
Less Money

Write For Catalog—  
Enclose This Adv.

and Receive  
Special Proposition

If in the market, state whether  
large, medium or small  
Sprayer is wanted.

DEALERS AND JOBBERS WANTED

"Friend" Manufacturing Co.

GASPORT, NIAGARA CO., N. Y.

Ship  
Your  
FURS

# NOW

### This Is the Time of HIGH PRICES

This is a war market and big fur buyers are besieging Taylor. We will pay you the highest price for every pelt and we can take all you ship. Every day is pay-day with Taylor. Your money goes out by return mail. Write for our free Market Reports.

F. C. TAYLOR FUR CO.  
International Fur Exchange  
200 Fur Exchange Bldg. St. Louis, Mo.

to **Taylor**  
INTERNATIONAL FUR EXCHANGE

# FURS

Ship To Biggs At Kansas City

Biggs pays top-notch prices for furs and guarantees a square deal. Three quarters of a million satisfied shippers. No commissions deducted. Send for Price List and Advance Market News. Highest Prices—Quickest Returns. Furs held separate and returned at once if you are not satisfied with grading and price. Just insert tag saying "Hold Separate" in package when you ship. FREE "Trappers' Exchange" our Monthly Magazine sent free to all interested. Trappers' Supplies at Factory Cost. Free Catalog. E. W. BIGGS & CO. 1518 Biggs Building, KANSAS CITY, MO.

**COLLINS' JERSEY RED**

PURE BRED to retain the natural advantages—big litters, quickest at market weight, on cheapest feeds. New Book Free tells why. the best pig bred 375 lbs. in 9 months.



# There's a Glidden Kind for Every Spray You Need

And a right kind too—the kind that will “go straight home” for every pest at large. In Glidden you will find a true economy spray, made to do its work surely and swiftly. Each kind is chemically correct, meeting every requirement of the national and state laws governing insecticide production.

Favored by having the largest and most complete facilities in the country, the Glidden organization has applied its chemical and spraying experience to every vital problem of the grower. The result is an absolutely dependable line of spray material.

Consider Glidden Arsenate of Lead as an example. This Glidden product has many advantages both in its application and its effectiveness. It has wonderful suspension qualities which assure uniformity and thoroughness of the spray. For strength and

effective action it is unexcelled. It is a finely divided fluffy powder which can be used both for spraying or dusting.

Other Glidden Products in this line are: Glidden Dry Powdered Arsenate of Calcium, Glidden Dry Powdered Bordeaux Mixture and Glidden Dry Powdered Bordo-Arsenate—all put up in convenient packages from 1 lb. cartons to 200 lb. drums.

Glidden dealers will be found in most localities. Write for the name of the nearest dealer and let us send instructive spray literature.

Remember that the name Glidden stands for Quality in Paints, Varnishes, Stains and Enamels as well as Insecticides and Fungicides.

The Glidden Company, Cleveland, Ohio, U. S. A.  
The Glidden Company, Limited, Toronto, Ontario, Canada  
Branches: New York — Chicago — Kansas City — San Francisco — London. Stocks in principal cities.

Glidden Dry Powdered Insecticides and Fungicides are not “ground” but are dried and disintegrated in their original “fluffy” form.

**GLIDDEN**  
DRY POWDERED  
ARSENATE OF LEAD

For Spraying and  
ONE POUND NET

Active ingredients: Arsenate of Lead (not less than) 100%  
Inert ingredients (not more than) 0%  
Total Arsenic (as metallic) (not less than) 100%  
Arsenic Oxide (As<sub>2</sub>O<sub>3</sub>) (not less than) 100%  
Arsenic in water soluble form (not less than) 100%

**GLIDDEN**

**INSECTICIDES-FUNGICIDES**

O  
T  
wait  
and  
are  
filled  
One  
some  
to be  
Nurs  
in the  
it pay  
Be  
varie  
result  
stunt  
and  
if at  
two v  
are s  
failur  
plant  
  
Do  
quick  
from  
a war  
ary,  
will  
few  
plant  
March  
Mo  
the s  
receiv  
or be  
plant  
left i  
moist  
them  
better  
be in  
ground  
dorm  
Col  
large  
in re  
afford  
when  
\$12  
grow  
ing st  
for \$  
little  
busin  
they  
short  
why  
ferior  
order  
order  
delay  
  
Th  
from  
Send  
prices  
desire  
which  
name  
comm  
a larg  
the m  
could  
main  
Sho  
south  
of pla  
If you  
grape  
chanc  
were  
in Oh  
other  
small  
As  
thing  
still d





## SMALL FRUITS FOR PLEASURE & PROFIT

By S. J. Bole



### Ordering Plants and the Selection of Varieties

**T**HE ORDER for small fruits and grapes should be placed during December or January. Those who wait until the last minute to order generally find that the plants of the varieties ordered are exhausted and, if the order can be filled at all, substitutions are necessary. One should never be compelled to accept some substituted variety as they are apt to be very inferior in any community. Nurserymen file their orders and fill them in the order in which they are received, so it pays to order early.

Besides the failure to receive the desired variety, the late shipment is quite apt to result in the loss of many plants and the stunting of others. Any kind of plants, and especially strawberries, grow poorly if at all after growth starts. Ten days or two weeks difference in time when plants are set in the field, is quite apt to spell failure or success in starting a small fruit plantation.

#### Plant While Dormant

Dormant plants start into growth quickly if the air is warm. If branches from a peach or cherry tree are taken into a warm room and placed in water in January, the buds will develop and blossoms will soon appear. This explains why a few days in April will start growth in plants quicker than will a few weeks in March.

Moisture is also important in starting the sap in plants. Oftentimes the grower receives dormant plants at a rainy time, or before his ground is quite ready for the planting. If they are heavily sprinkled and left in a fairly warm room, or heeled in moist soil where the rain and sun strike them, growth will start at once. A much better place to hold them dormant would be in an ice house, fruit cellar or in the cold ground of an implement shed. Planting dormant plants is very essential to success.

Competition among the many nurseries, large and small, has resulted in low prices in recent years. A grower can hardly afford to put down the tips of blackcaps when he can buy good plants for \$10 or \$12 a thousand. Much less, could a grower afford to dig up a row of his bearing strawberries, when he can buy plants for \$3 a thousand. Since there is very little profit at present in the nursery business, nurserymen plant only what they are sure of selling. This results in a shortage each year in plants, and this is why the late orders are not filled, or inferior varieties are substituted for the ones ordered. Mr. Grower, if you are going to order plants for the coming spring, don't delay the matter—do it now.

#### Where to Order Plants

The one best way to secure plants is from your nearest reliable nurseryman. Send for his catalog or write him for prices on the varieties and amounts you desire. An order blank is always sent on which you can fill in the number of plants, name of variety and cost. The money is commonly sent with the order. In case of a large order when the grower hasn't all the money on hand, a part of the money could be sent with the order and the remainder sent in the spring.

Should one order from a northern or a southern nursery? As to quality and vigor of plants there is little if any difference. If you order strawberries, raspberries and grapes from an Indiana nursery, the chances are that the strawberry plants were grown in Michigan, the raspberries in Ohio and the grapes in New York. In other words, most nurserymen grow but a small per cent of the plants they sell.

As we have already said, the important thing is to get your plants when they are still dormant. A Mississippi grower could

order his strawberry plants from Illinois or Michigan and they would grow equally well. As every 100 miles north and south makes a difference of one week in the beginning of spring, it can be readily seen why plants are seldom dormant when planted from a nursery several hundred miles south from where they are planted. Early starting plants like gooseberries, currants and strawberries, suffer especially when shipped from the south to the north. Other things being equal, the order should be placed at nearest nursery. Three days in transit is far superior to three weeks.

#### What Varieties to Order

One cannot prescribe the list of varieties for the whole country in a brief article like this. It is a well-known fact that a certain few varieties always grow best in any one locality. What these few varieties are, can usually be determined by (1) asking one's neighbors, (2) writing the nearest nurseryman or, (3) writing the nearest Experiment Station.

In selecting varieties of almost any plant, and strawberries in particular, vigorous growing sorts should be selected for light soil and weak growing kinds for very fertile soil.

Early and late varieties is another factor in the selection of a variety. For home use, a succession of varieties is highly desirable. A few rows of a late variety of strawberries will insure several more shortcrops at the end of the season. On the other hand, the overlapping of two fruits, like late strawberries and early blackcaps, should be avoided. For the home garden a few ever-bearing varieties are not only interesting but useful. Ever-bearing raspberries are those varieties which produce fruit on both the old and the new wood. The ever-bearing red raspberry is more popular than the older ever-bearing blackcap. The ever-bearing strawberry has been greatly developed during the past few years and has now passed beyond its novelty stage.

The overlapping of varieties and the planting of ever-bearing sorts should be avoided by the man who is growing for market. The commercial grower should seek to avoid, so far as is possible, the selection of two fruits that ripen together like blackcaps and dewberries.

It is a well-known fact that only a few certain varieties grow best in any one locality. It is therefore impossible to give the best varieties for any isolated region. That the reader may be guided somewhat in his choice, a small list of each of the small fruits will be given:

#### Strawberries

The Dunlap, introduced by Rev. J. R. Reasoner of Urbana, Ill., is by far the best single variety to plant. It is a beautiful, dark red berry of high quality, and very productive. It has a medium season and thrives even when neglected. As a late berry to plant along with the Dunlap in the central or northern portions of the United States the Aroma and Gandy are good. Both of these varieties are perfect, which is a point in their favor over that of imperfect sorts like the Haverland and Warfield. The Missionary and Klondike are the two varieties most grown in the south. Both of these were introduced between 1900 and 1910. These are both very firm and excellent shipping berries and can be readily shipped long distances under refrigeration. In this respect, they differ from the Dunlap which is a soft berry and cannot be readily shipped to distant points.

#### Grapes

The Concord is the most widely known and grown of the American grapes. It is a vigorous, hardy, healthy, black grape. It

is the variety for grape juice and can be used in dozens of ways in the home. Like many other varieties, it takes on its color long before it is ripe and is often picked too green. When ripe, it is very good eaten from the vines. For a white grape, the Diamond and Niagara are among the best. They are high in quality and are reliable sorts to grow. For a red grape, the Delaware and Woodruff are very good. The Delaware is a weak grower but produces beautiful little bunches of grapes of the highest quality. If one wishes to grow a red grape on a high trellis, arbor or pergola, the Woodruff should be planted.

#### Raspberries

The writer had the opportunity of harvesting and studying the fruit from eleven kinds of red raspberries and four purple caps during the past season. All the red varieties were, as usual, more or less disappointing. They fill the pail or even pint box too slowly and are too soft to keep their appearance and quality. Of these red varieties, the Cuthbert gave as good a record as any. The Herbert has large beautiful berries but is a weak grower. For home use and for local market, either the Schaffer or Haymaker are superior to any of the red varieties. The dull dark red color is against these, but the size, quality and productiveness more than makes up for this.

Of the eleven varieties of black raspberries harvested this past season, Older and Plum Farmer were superior. The Cumberland was not among the list, so we can't compare it with the above two. Any one of the three varieties should be satisfactory although the Cumberland seems to be the most susceptible to anthracnose, the arch enemy of blackcaps.

#### Blackberries

The Snyder is still the most vigorous and, in certain regions, the most prolific of the blackberries. The writer prefers either the Ward or the Eldorado. These two varieties start slower but bear well after the second year, and their quality is beyond question. All three varieties grow upright and, with the proper pruning, need no trellis.

#### Currants

There is not such a wide difference in the varieties of currants as there is in the other small fruits. The Perfection, however, is probably the most popular and prolific of the many sorts of red currants.

A white currant is little used and, being less acid than the red, is generally used for dessert purposes. For this purpose a large fruited variety is best. The white Cherry is probably best in this respect.

#### Gooseberries

The large European varieties mildew more or less badly here and so are little planted. However, with modern methods and knowledge of spraying, they can now be readily grown. The Oregon Champion is the most prolific and easiest to grow of the native varieties and should be largely planted in the home garden.

#### Grafting Grapes

##### Editor of AMERICAN FRUIT GROWER:

Can you give me any information through the AMERICAN FRUIT GROWER as to the best way of grafting grapes. Do you graft on the trunk, branch or root? I grafted a lot on the root but very few grew. I think a grape is hard to graft.

JOHN BATES, Oregon.

Reply: One should get a high per cent of successes in grafting grapes. Graft on the root a few inches below the surface of the ground. The cleft graft is used on an old root and the whip graft on a young root. Cions should be vigorous and dormant. The best results are gotten when grafting wax is not used. The graft is tied with raffia or twine. A mound is carefully made of firm soil just to cover the upper bud of the cion. The raffia or twine is cut after growth starts. Twice during the summer the mounds should be removed and the roots cut that have started at the base of the cion. The mounds are gradually leveled off after the first summer.

#### SOUTH AFRICA COPIES CALIFORNIA

Under the name of the South African Fruit Exchange, an organization will be formed which follows, so far as practicable, the lines of the California Citrus Exchange. It is anticipated that this organization will prove an equal boon to the citrus growers of South Africa as its counterpart has been to the growers of California.



### Concerning your Storage Apples

Numerous tests at various apple exhibits, as well as the experience of our customers who have used bushel baskets for storage prove that bushel baskets sold by us are a wise investment.

#### Bushel Shipping Baskets

##### The Universal Package

used with center-posts will protect your fruit with 450 pounds of fruit on top. This allows you 10 baskets in each pile with assurance of no injury whatsoever.

Besides the Universal Package costs less, is easier to pack, handle and ship. It is coming to the front faster every day.

Send for Folder "A" for further particulars

Sample baskets will also be sent to all users of over 300 baskets per year.

**Package Sales Corp.**  
104 E. Jefferson Street  
South Bend, Ind.

**RAISE BELGIAN HARES**  
Huge profits easily and pleasantly made. We furnish stock and pay you \$6.00 a pair and express charges for all you raise. Complete book "Fortunes in Hares," 10c. Nothing free. NATIONAL FOOD & FUN ASSOCIATION  
Sept. 30 MILWAUKEE, WIS.

**Green's Trees**  
Pedigree Trees  
Grown from Bearing Trees  
Of highest quality at moderate prices. 40 years' experience. \$100,000 capital. Four nursery farms. Buy direct from the old and reliable Green's Nursery Company and  
**SAVE BIG MONEY**  
No agents employed. Apple trees, pear, cherry, plum, peach, quince, nut trees, grape vines, gooseberry and currant plants, raspberry, blackberry, strawberry, shade trees, shrubs, vines and roses for sale. Largest and oldest nursery selling  
**DIRECT TO PLANTERS**  
Write for free catalog, also ask for free Fruit Book. Read our true-to-name guarantee. Address  
**GREEN'S NURSERY CO., 105 Wall Street, Rochester, N. Y.**

**"GET A WITTE"**  
Direct From Factory  
Save \$15 to \$200  
Money Back if \$200  
Not Satisfied  
on my new 90-Day Offer. Three months to decide—Cash or Payments. Sizes 2 to 30 H.P. Sure Kerosene—Stationary, Portable or Semi-Portable. Big saving in Fuel Cost. Easy to operate. Catalog FREE. Write for it today.—ED. H. WITTE, Pres.  
**WITTE ENGINE WORKS**  
2143 Oakland Ave., Kansas City, Mo.  
2143 Empire Bldg., Pittsburgh, Pa.



# CLASSIFIED ADVERTISING

Rate, 15 cents per word

## AUTO SUPPLIES

**FORDS START EASY IN COLD WEATHER** with our new 1919 carburetors. 34 miles per gallon. Use cheapest gasoline or half kerosene. Increased power. Styles for any motor. Very slow on high. Attach it yourself. Big profits to agents. Money back guarantee. 30 days' trial. Air-Friction Carburetor Co., 294 Madison, Dayton, Ohio.

## FOR SALE

**FOR SALE—HYDRAULIC PRESS NO. 4.** Ohio grater, gasoline sprayer and apple boxes. E. I. Gordon, R. F. D. 4, California, Mo.

**DUROC PIGS \$30 A PAIR. PEDIGREED.** S. Weeks, De Graff, O.

**HONEYSWEET BLACK RASPBERRY. BEST** for home and market. Plant circular free. A. B. Katkamier, Macedon, New York.

**COON HOUNDS—FOR SALE, TWO FEMALES** and two males, good size, nicely marked; all are genuine tree dogs; will hunt together or alone; will not run rabbits at night. These dogs are for sale. Will sell them in pairs or otherwise. If they do not do the work, the money paid is refunded. If good hunting dogs are what you are looking for, any of these will suit you; do not hesitate for water, mud, etc. Range in age from 3 to 4 years of age. If you would like one or more, write Post Office Box 320, Paris, Tenn.

**PLANTS AND TREES AT HALF PRICE.** Also a well improved fruit farm of eighty acres. Price \$1500.00. Gray's Nursery, Salem, Ind.

**LEAF TOBACCO, HOMESPUN, 2 YEARS** old, aged in bulk; best chewing or smoking, 3 lbs., \$1.50; 6 lbs., \$2.85; 10 lbs., \$4.50. Postpaid. Address W. G. Adams Tobacco Company, Paris, Tenn. References, Commercial Bank.

## MISCELLANEOUS

**ORCHARD MANAGER WANTED—GOOD** opportunity for man of experience and initiative to handle bearing apple orchard of about 160 acres. R. G. Yost, 1629 Locust St., St. Louis, Mo.

**THOUSANDS GOVERNMENT JOBS OPEN** to men-women-girls. \$95.00 month. Quick increase. Common education sufficient. Write immediately for free list positions open. Franklin Institute, Dept. Y 142, Rochester, N. Y.

**WRITE THE WORDS FOR A SONG. WE** compose music, secure copyright and submit copies to leading publishers. Submit poems now—examination free. Broadway Studios, 129C Fitzgerald Bldg., New York.

**PARKER'S HAIR BALSAM**  
A toilet preparation of merit.  
Helps to eradicate dandruff.  
For Restoring Color and  
Beauty to Gray and Faded Hair.  
50c. and \$1.00 at druggists.

## Save Auto Repair Bills

"The Trouble Department" of the AUTOMOBILE DEALER AND REPAIRER (a 100-page illustrated magazine) will save every car owner many dollars a year in repairs. This is the only journal in the world especially devoted to the practical and mechanical side of motoring. Questions are answered by experts, free to all subscribers. Send at once twenty-five cents in stamps or silver for a three months' trial subscription. Motor Vehicle Pub. Co., Dept. G, 71 Murray St., New York

## Don't Wear a Truss



C. E. BROOKS, 219B State Street, Marshall, Mich.

## Deafness



Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

**Wilson Common-Sense Ear Drums**  
"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write today for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

**WILSON EAR DRUM CO., Incorporated**  
213 Inter-Southern Bldg. LOUISVILLE, KY.

## Coming Meetings

### Ohio Horticultural Society

The annual meeting of the Ohio State Horticultural Society, will be held at Columbus, O., January 28-29.

### Northwestern Fruit Growers

The annual meeting of the Northwestern Fruit Growers is being arranged for at Spokane, Wash., December 10-15. The program will include the regular sessions of Washington State Horticultural Association for the first three days, and the last day will be devoted to the annual grade and pack conferences.

### New Jersey State Horticultural

The 44th meeting of this society will be held in Hotel Chalfonte, Atlantic City, N. J., December 2-4.

### Minnesota Horticulturists

The meeting of the Minnesota Horticultural Society will be held at West Hotel, Minneapolis, Minn., December 3-6.

### Peninsular Horticultural Society

The next meeting of the Peninsular Horticultural Society, will be held in Bridgeville, Del., January 14, 15 and 16, 1919.

### Montana Horticultural Society

The next annual meeting of this society will be held at Polson, Mont., January 21-23.

### Virginia Horticultural Society

The annual meeting of the Virginia Horticultural Society will be held Dec. 5-8, at Lynchburg, Va.

### Ohio Apple Show

The Ohio Apple Show will be held in connection with the National Farmers' Exposition on Dec. 6-14, at the Terminal Auditorium, Toledo, O.

### National Tractor Show

February 10, 1919, is set as the date of the National Tractor Show in Kansas City. There will be no pleasure car automobile show this year.

### Michigan Horticultural

From December 9-12, the Horticultural Society of Michigan will meet at Detroit, Mich.

### Missouri Horticultural

There will be held in Kansas City, Mo., December 3-5, the annual meeting of the Horticultural Society of Missouri.

### Adams County, Pa., Growers

The Fruit Growers' Association of Adams County, Pa., will hold their 14th annual convention in Fruit Growers' Hall, Bendersville, Pa., on December 18-20.

### Kansas Horticultural

The date of the 52d annual meeting of the Kansas State Horticultural Society, is December 17-19, at Topeka, Kas.

**New York Fruit Growers' Ass'n and Western New York Society**

Combined annual meeting January 15-17, Rochester, N. Y.

### Interesting Iowa Meetings

The Mid-West Horticultural Fruit, Flower and Garden Exposition will be held in the Coliseum, Des Moines, Ia., December 10-13. The dates, which were postponed from November, now happily coincide with those of the Iowa Agricultural Societies and the Iowa State Grange, as well as the Iowa State Agricultural Society. Extension Horticulturists from thirteen states will hold their annual meeting in connection with this exposition.

### 8th Ohio Apple Show

The Ohio State Horticultural Society will hold its eighth apple show in Toledo, December 6-14, in conjunction with the National Farmers' Exposition.

## SPRAY!

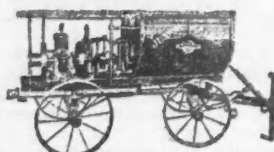
### Grow More Dollars

Spray for better fruit, larger crops, bigger profits. For fast work, fine, clinging sprays and long-lived outfits, spray the DEMING WAY. Send for new Deming Catalog, a guide to all types and sizes of sprayers. It's free.

THE DEMING COMPANY  
918 Depot St., Salem, Ohio  
Pumps for all farm uses

## DEMING SPRAY PUMPS

# SPRAYING—Protects Your Trees Plants and Vines



Our Junior Leader  
Two-Horse Power Engine  
Diamond Sprcket-Chain Drive

Field Force Pump Co., Dept. B, Elmira, N. Y.

Experience has proved that fruit trees properly cared for will double—even triple their yield.

High and Constant pressure for thoroughly saturating foliage is the secret of success.

Perfect Agitation keeps poison in thorough solution.

Strainer Cleaners to prevent clogged pipes and nozzles are specialties of the "Ospraymo" machines.

They stand up under most severe conditions. Foliage unsprayed breeds insects, scale, fungus, blight. Use a sprayer that covers.

The Junior Leader is simple, safe, satisfactory. Especially advised for orchards and groves.

Like Rip Van Winkle they "Live long and prosper"—the man who uses them.

Write for complete catalog and name of nearest agent.

## NEOSHO NURSERIES

At a recent meeting of the Neosho Nurseries Co., of Neosho, Mo., the following directors and officers were elected: Directors, C. E. Buehner, P. M. Ransom, Gertrude M. Hazen, W. P. Stark, J. J. Hazen; officers: president and general manager, J. J. Hazen; vice president and treasurer, C. E. Buehner; secretary, P. M. Ransom.

## Pattern Department

**No. 2670. Misses' Dress**—Cut in 3 sizes: 16, 18 and 20 years. Size 18 requires 5½ yards of 40-inch material. Width of skirt at lower edge is about 2½ yards, with plaits drawn out.

**No. 2666. Girls' Dress**—Cut in 4 sizes: 8, 10, 12 and 14 years. Size 12 will require 3½ yards of 44-inch material.

**No. 2646. A Good Junior Suit**—Cut in 3 sizes: 12, 14 and 16 years. Size 14 requires 4½ yards of 44-inch material.

**No. 2659. Ladies' Dress**—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 3½ yards of 54-inch material. Width of skirt at lower edge is 2 yards.

**Nos. 2647-2644. Ladies' Costume**—Waist 2647 cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Skirt 2644 cut in 7 sizes: 22, 24, 26, 28, 30, 32 and 34 inches waist measure. It will require 7½ yards of 36-inch material for a medium size, for the entire costume. The skirt measures about 1½ yards at lower edge. TWO separate patterns, 10 cents FOR EACH pattern.

**No. 2657. Child's Short Clothes Set**—Cut in 5 sizes: 1, 2, 3, 4 and 5 years. Size 4 requires 3¼ yards of 27-inch material for the dress, 1¼ yards for the petticoat and 2½ yards for the combination.

**No. 2650. A Good Service Dress**—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5½ yards of 44-inch material. The skirt measures about 2 yards at the foot.

**No. 2645. Child's Play Dress**—Cut in 5 sizes: 1, 2, 3, 4 and 5 years. Size 4 will require 2¾ yards of 36-inch material.

**No. 2672. Ladies' Apron**—Cut in 4 sizes: Small, 32-34; Medium, 36-38; Large, 40-42; and Extra Large, 44-46 inches bust measure. Size Medium requires 4 yards of 36-inch material.

**No. 2363. Boys' Suit**—Cut in 4 sizes: 3, 4, 5 and 6 years. Size 4 will require 2¾ yards of 40-inch material.

**No. 2655. A Serviceable Costume**—Cut in 7 sizes: 34, 36, 38, 40, 42, 44 and 46 inches bust measure. Size 38 requires 5½ yards of 44-inch material. Width of skirt at lower edge is about 2 yards.

### CATALOGUE NOTICE

Send 10c in silver or stamps for our Up-to-Date Fall and Winter, 1918-1919 Catalogue, containing 550 designs of Ladies', Misses' and Children's Patterns, a Concise and Comprehensive Article on Dressmaking, Also Some Points for the Needle (illustrating 30 of the various, simple stitches) all valuable hints to the home dressmaker.

### ORDER BLANK FOR PATTERNS

PATTERN DEPT., AMERICAN FRUIT GROWER, 329 Plymouth Ct., Chicago.

Enclosed find.....cents for which send me the following:

Pattern No. ....Size..... Pattern No. ....Size.....

Pattern No. ....Size..... Pattern No. ....Size.....

Name.....

Address.....

Postoffice..... State.....

Be sure to give the pattern number and the correct size.





# Winter Protection For Your Fruit Trees

By M. D. Underwood, Illinois

**T**HE SEASON is now approaching when mice and rabbits will be very destructive to young fruit trees unless some means of protection are employed. Of course every one having young fruit trees should provide sufficient protection of some kind before these rodents begin their operations in the orchard. When the young orchard has been properly tended during the growing season and has been given clean cultivation with perhaps a late seeding of some cover crop and there is no dense growth of grass or rubbish about the trees there is little danger of injury by mice. These rodents usually do the most damage in orchards where there is plenty of such protection offered them and at the same time abundant material for nest building and the making of the winter home.

But rabbits may do considerable injury in almost any locality and under any conditions although they too can be more greatly feared where the orchard has been more or less neglected. Trees most liable to be attacked by rodents are those that have been set out only one or two years. Damage done the first year is particularly harmful owing to the trees not being established. They are therefore not able to supply the sap in abundance required to heal over the wound. It is particularly destructive to fall planted trees to be bitten up by rodents during the first winter for the above reason. A large percentage of trees so gnawed die. After a tree has been planted five or six years it is counted immune from attacks of rodents although so much depends upon the condition of the orchard, the weather, food available for rodents, variety of trees, etc., that no fixed age can be given.

## Protection is Necessary

For the first five years after setting protection is necessary. After that time if injury occurs it may be considered as rather accidental. As to the kinds of trees oftenest attacked apple, pear, quince, peach, plum and cherry seem to be attacked in the order named. Cherry trees are seldom injured. The surest protection from mice and rabbits is afforded by individual tree protectors of one form or another. These protectors can be purchased already made or be prepared on the farm.

They may easily be removed to look for borers, aphids and other insects. Wire screen, cornstalks, heavy paper or rags may be used, but there are some disadvantages attached to their use. Too often old screen is used and this rusts out before one expects it. Cornstalks when carefully put on are good as long as they last, but the strings with which they are tied rot, heavy winds, etc., displace the stalks thus exposing the body of the tree. Heavy paper or rags are too often not removed in the spring and interfere with the circulation of the sap and in due time the very precaution taken to protect the tree interferes with its growth and in some cases the tree dies. No form of wrapping material will keep out mice unless bound closely about the tree. Mice can either burrow under or crawl over and when once inside the wrapper is a protection for them. Rabbits do far more damage in young orchards than any other rodent and mice are the next most destructive. But care must be exercised in using tree protectors. They must be placed closely around the trunk of the tree and should be pushed down an inch or so in the ground. They should not be applied until the growing season is over and must be promptly removed when the sap begins to rise in the spring.

There are paints and washes which are good to a certain extent in protecting the trees from injury. These are fairly effective where rabbits are scarce and there is plenty of other food for them, but they cannot be absolutely depended upon when there are many rabbits and a small supply of food. As there are perhaps some who wish to use a wash however and do not know how to make it I will give the formula of a good one.

## Recipe for Wash

To one gallon of sweet milk add two pounds of flowers of sulphur, two pounds yellow ochre, one gill of turpentine, one dram of tincture of asafetida, one dram

gum arabic and four eggs. This mixture must be dissolved and after standing 24 hours applied to the trees with a brush. This solution is not only of benefit in protecting the trees from mice and rabbits but also from insects as well. Thick white-wash about the consistency of cream to which a sufficient quantity of blue vitriol has been added to give it a pale blue color is another wash which is more or less effective and is applied with a brush. Other washes composed of soft soap and carbolic acid, pine tar and paint are sometimes used, being applied two or three times during the winter. One gallon of soft soap or one pound of hard soap and one gallon of water and two ounces of crude carbolic acid form a wash that will give good results.

## Banking the Trees

In protecting the young trees from rabbits and mice we should also protect them from the cold by banking up the trunk with earth. This extra covering is the same to the young trees as an extra comfort thrown over our bed on a zero night in winter. It gives a chance to straighten the trees up into their place if the storms during the summer have leaned them the wrong way, holds them stiff and rigid to their place against many a winter blow, protects the roots against a hard, sudden freeze, gives good surface drainage and keeps the frost from lifting them. Many a fruit grower has been almost heart sick to find the roots of more than half of his fruit trees exposed after a winter of thaws and freezes and it is no small job to get them back into their places and although they may live they very seldom recover their full vigor. This banking up process seems to be a very simple thing but it is a harder task to do it properly than many might suppose. It does not require a great broad mound of earth but just a few shovelfuls placed right against the trees about six or eight inches high. In digging the earth a hole should not be made close to the trees and left to stand full of water which would be of more or less injury to the trees but it should be filled up a little more than even with the surface of the ground. Banking up with a shovel if it is done right is lots better than turning a furrow to the trees with a plow.

If there are gullies in the orchard they should be filled with brush and weeds so that no more of the good soil will wash away. This trash will not only stop the washing but it will catch and hold other soil that washes in and gradually the gullies will be filled and become even and good soil. No owner of an orchard who is up to date will kill or allow any one else to shoot quails or other birds that dwell in the orchard during the winter. Shooting in the orchard is not a good thing for any reason and when birds are killed we are allowing the best friends of fruit growing to be decimated. The more birds that we can induce to make homes in our orchards and on our farms the fewer pernicious insects we will have to contend with. Birds are very valuable little creatures on the farm and especially on the fruit farms.

**Editor's Note**—In our personal experience and observations, we have found the wire tree protectors when purchased from a reliable dealer to be the most effective tree protectors. They are economical owing to their lasting qualities.

## A HEAVY DROP—WHY?

From many orchardists comes the complaint of an unusually heavy drop of mature or nearly mature apples. In some cases it is so pronounced as materially to diminish the harvest. Quite a number of the drops show codling moth, and where this is the case no further inquiry as to the cause is necessary. Let the orchardist redouble his energies in spraying for this pest.

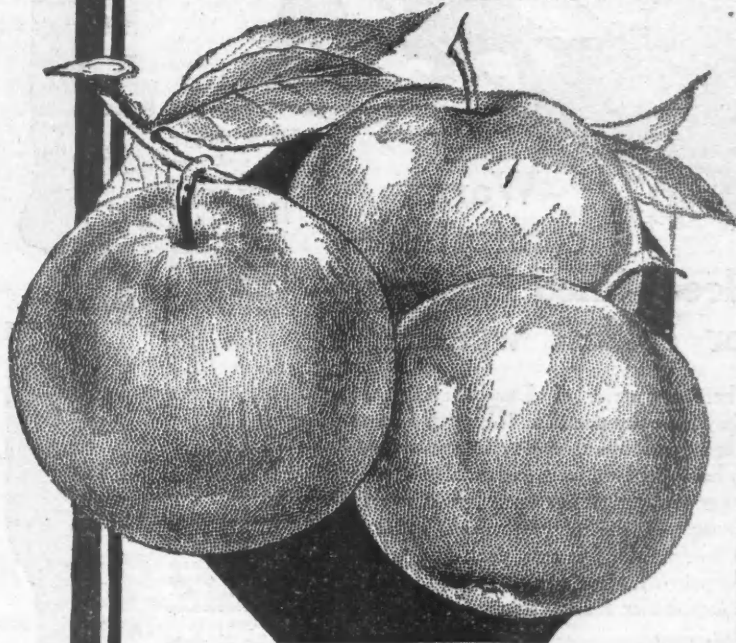
But there is a large proportion of dropped fruit in which no such injury is apparent. We hope that the experiment stations will take note of this and give some study to the subject with a view to finding a remedy for this injurious condition.

# Spray for Better Fruit

## Special Spraying Service Bureau

The greatest Chemical Company in America offers to farmers, fruit growers, truck growers and gardeners the service of experts in solving horticultural problems connected with the growing of fruit and vegetables. This service is intensely valuable but costs you nothing.

Write us concerning your spraying problems.



## For Dormant Period Spraying

We specially recommend Orchard Brand B. T. S. or Lime Sulphur Solution. Both products are of the highest standard and are equally efficient in spraying for San Jose and other scales, peach-leaf curl, pear-leaf blister-mite and other pests. Your choice between B. T. S. and Lime Sulphur will depend only on whether you wish to purchase a dry or liquid product.

Orchard Brand Lime Sulphur is a standard, dependable spraying solution, always of uniform strength. Most orchardists, however, prefer Orchard Brand B. T. S. because it is a dry product and easier to handle. Freight charges are less and there is no waste by leakage. A 100 lb. Keg of B. T. S. makes the same quantity of spray solution as a 50 gallon barrel of Lime Sulphur Solution. You add water according to plain formula.

**Orchard  
Brand**

Spray Materials

A complete line of standardized Insecticides and Fungicides manufactured by the largest chemical company in America.

**General Chemical Co.**  
Insecticide Dept., 25 Broad St., New York

## 9 CORDS IN 10 HOURS



BY ONE MAN. It's KING OF THE WOODS. Saves money and backsache. Send for FREE catalog No. 122 showing low price and latest improvements. First order gets agency. Folding Sawing Machine Co., 161 West Harrison St., Chicago, Ill.

## The Threshing Problem

**Solved** Threshes cowpeas and soybeans from the mown vines, wheat, oats, rye and barley. A perfect combination machine. Nothing like it. "The machine I have been looking for for 20 years," W. F. Massey. "It will meet every demand," H. A. Morgan, Director Tenn. Exp. Station. Booklet 55 free. Keger Pea & Bean Thresher Co., Morristown, Tenn.



## Turn stump land into Money

Increase your acreage and thereby increase your income.

Clear your stump land cheaply. No expense for teams or powder.

One man with a

can outpull 16 horses. Works by leverage—same principle as a jack. 100 lbs. pull on the lever gives a 48-ton pull on the stump. Made of the finest steel—guaranteed against breakage. Endorsed by U. S. Government experts.

**K HAND POWER  
Stump  
Puller**

Write today for special offer and free booklet on Land Clearing

Works equally well on hillsides and marshes where horses cannot operate

**WALTER J. FITZPATRICK**

Box 2, 182 Fifth St., San Francisco, Cal.

Kindly Mention American Fruit Grower when writing to Advertisers





Three of the  
fine values in  
Durable-DURHAM  
Fleecy-lined Hosiery

## Warm, comfortable Fleecy-lined Hosiery for coldest weather

There are styles of Durable-DURHAM Hosiery for every month in the year. Some are light and sheer, some medium weight, some heavy for hard work and now for Winter weather you can get the same honest quality in Durable-DURHAM Fleecy-lined Hosiery. The fleecing inside is soft, thick and warm. Every pair is long-wearing and good looking. Ask your dealer for this splendid fleecy-lined hosiery.

### DURABLE DURHAM HOSIERY FOR MEN, WOMEN AND CHILDREN

is made strongest where the wear is hardest

Every pair is strongly reinforced at points of hardest wear. Tops are wide and elastic; legs are full length; sizes are accurately marked; soles and toes are smooth, seamless and even. The Durham dyes are fast so that colors will not fade from wearing or washing.

There are styles for every member of the family, for everyday work, dress or school, selling at 25, 35, 40 and 50 cents per pair. Look for the Durable-DURHAM Trade Mark ticket attached to each pair.

You should be able to buy Durable-DURHAM Hosiery at any dealer's. If you do not find it, write to our Sales Department, 88 Leonard St., New York, for Free Catalog showing all styles and we will see that you are supplied.

DURHAM HOSIERY MILLS, Durham, N. C.

#### JACK FROST

A good, warm children's stocking. Heavy weight. Double fleecy-lined. Full of warmth and full of wear. Strongly double reinforced heels and toes. Sizes 6 to 7½, 35c. Sizes 8 to 10, 50c.

#### SNOWBOUND

A big and warm stocking, outside, extra wide. Double fleecy-lined throughout. Full of warmth and full of wear. Extra large and elastic top. Strongly double reinforced heels and toes. Price 50 cents.

#### HIKER

An extra warm and long wearing sock. Double fleecy-lined throughout. Full of warmth and full of wear. Strongly reinforced heels and toes. Price 35 cents.

## Apples Follow the Spray

By J. J. Newlin, Iowa

THE orchard on the County Home of Washington county, Iowa, is full of apples. The rest of the orchards in the county have almost no fruit on them this year unless they have been sprayed regularly every year. A part of the County Home orchard was let pass this season without spraying to show the effect of the spray on the fruit.

The apples set on the unsprayed trees

Mr. Frank Beatty, and the county agent, M. H. Feddersen, are planning to use these results to show that the spray will make apples grow where they did not grow before.

#### Effects of Spray

All of the orchards in this county that have not been sprayed this year have a small crop of apples. Every orchard that has been sprayed even for the first time has some fruit. The orchards that have been treated every year have a full crop of apples this year, except where pruning was neglected. This pruning applies to the older orchards that were set too close together. These older trees that are close to each other do not have a good crop this season. The writer has driven all over



Grimes Golden, Not Sprayed, Crop Light

almost as well as on the sprayed ones, but almost every apple on unsprayed trees is the home of one or more worms of the codling moth. These wormy apples are falling off rapidly as shown by the illustrations.

#### Kind of Spray Used

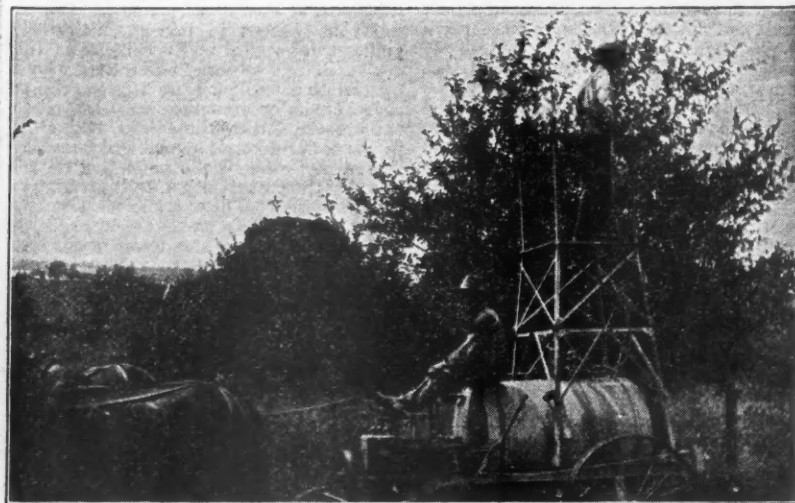
The materials used on this orchard were lime-sulphur and arsenate of lead. About three gallons of commercial lime-sulphur and two pounds of arsenate of lead was added to each barrel of water that was used on the orchard. The spray was applied with hand power on the wagon as it was driven through the orchard. The fruit is on all the trees and not on just a few varieties. Grimes' Golden, Jonathan, Northwestern Greening, Ben Davis, Wealthy, and Roman Stem, all have a full crop. This orchard has been sprayed every year for a number of years. Three cover-



Grimes Golden, Sprayed, Crop Heavy

this county, and on inquiry has found that in an orchard where the trees have a full crop of apples the spray has been used. The apples have followed the spray.

Iowa can grow corn and beats the world at the game. She beats the world because the men who raise the corn have weather and soil, and give the corn the best possible attention at the proper time. Iowa apples are as good as any that grow, and better than most on the market so far as flavor and color go. The men who use common



On the Job at Spraying Time

ings per year are the common practice. The first has been put on as the buds began to show some color in the spring, the second was put on as the last half of the petals were falling, and the third is put on about five weeks after the second. This last was omitted this year because of help shortage.

The part of the orchard that was not sprayed this season has shown that the spray pays. The fruit is there but has the scab and the worms on and in most every apple. This damaged fruit is dropping off and is not as large as the apples on the other trees. Since the County Home is the property of the county, the manager,

sense and spray their orchards are going to get the same benefit from their apple crop as Iowa does from her corn crop. Apples follow the spray as Tennyson's knight followed the gleam.

Look at the label on your copy of the AMERICAN FRUIT GROWER and see if it is time for you to renew your subscription.

The Fruit Growers' Association of Ontario, Canada, reports that an effort is being made to produce a pear resistant to blight, by crossing three Russian varieties—Kurskaya, Bessimiaka and Sugar Pear, with Clapp and Bartlett.

**Send for This  
Wonderful One-Man Puller**

and pull your stumps 30 days FREE. One man alone handles and operates. No horses needed—no extra help required—wonderful leverage principle gives a man giant's power to pull big, little, rotten, low-cut tap-rooted stumps and brush. Patented quick take-up for slack cable. Several speeds—when stump loosens increase the speed and save time. Works in any position. Easily moved around field.

**Pull Stumps Free**

Thousands of Kirstin Men Alone Handle Biggest Stumps!

Single Double Triple Power!

**Kirstin One-Man Stump-Puller**

The Kirstin will clear an acre from one anchor. All-steel construction—unbreakable. Sent anywhere on promise to give puller a fair trial. If satisfied, keep puller. If not pleased, return at our expense. You don't risk a penny. Four easy ways to pay. Priced as low as \$49.50. One-man style or HORSEPOWER—all sizes. 2-year guarantee, new or no flaw.

**Big Free Book!** Send for most valuable stump puller book—pictures—prices—forms—letters from Kirstin users—also full details of Special Agent's Proposition. Don't miss it! A.T. FREE. Write today.

**A. J. KIRSTIN CO., 2901 Lud St., Escanaba, Mich.**

Send No Money Not even a penny! After 30 days FREE trial you are to be the judge. Your word is final.

Half Year to Pay Buy on easy payments if you wish. This way the Kirstin pays for itself from the fine profits it makes you.

Shipment from nearest of following distributing points saves time and freight:  
Escanaba, Mich.  
Atlanta, Ga.  
Portland, Ore.  
Seo, Canada  
World's Largest Makers of Stump Pullers

**RHODES DOUBLE CUT PRUNING SHEAR**

*Patented*

**RHODES**

**RHODES MFG. CO.,**  
532 S. DIVISION AVE., GRAND RAPIDS, MICH.

THE only pruner made that cuts from both sides of the limb and does not bruise the bark. Made in all styles and sizes. All shears delivered free to your door. Write for circular and prices.

He says  
lamb, e  
struction  
ual is  
right o  
percent  
is gener  
that of  
gent she  
knowing  
strong c  
by breed  
the first  
flocks th  
sheep, b  
by breed  
Hand  
The m  
just now  
of labor.  
manner,  
fact that  
30 cows  
be allow  
machine.  
When  
chine wil  
sanitary  
cows als  
harmless  
While  
sired bec



# Livestock and Dairy



## Cow Needs Water

**T**HE COW is an animal that furnishes liquid, it is therefore not to be wondered at that she demands a convenient and plentiful supply of water if she is to make her best returns. Some persons are satisfied to leave poor bossy to seek her drinking water from a hole in a pond through the winter months. Each hard case she does just what you could do, goes without, much of the time, and pays you back for your inconsiderate conduct by cutting short her flow of milk. The ideal drinking arrangements for milch cows is the individual drinking system in the barn itself. This prevents the spread of disease and insures to the cow the sip of water which she likes and profits by after being fed. Next to this ideal arrangement, the sheltered tank best fills the need of both cow and milker.

## Best Practice with Sheep

It is a pity that so many sheep raisers will not conform to the good practice of breeding only fully matured ewes. To breed the ewe lambs is a serious and destructive mistake, and one that beginners in the sheep industry are prone to. To all such we recommend a careful perusal of these words of Frank Kleinburg, a leading authority on sheep in the United States.

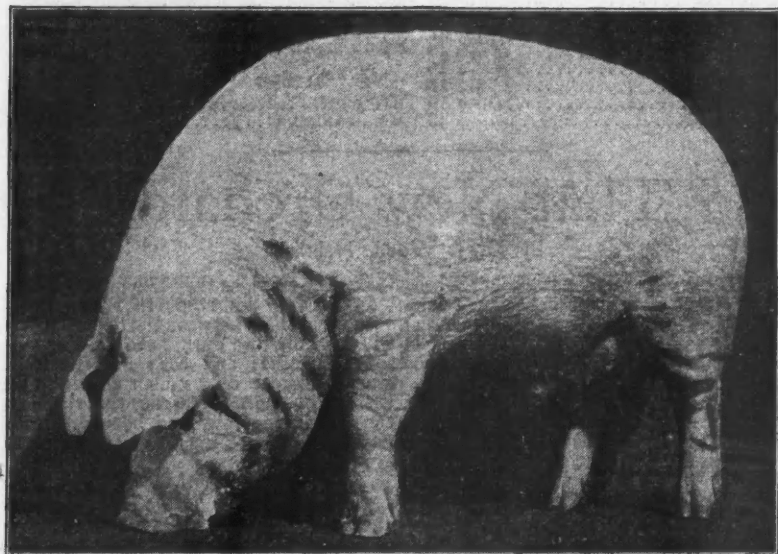
are convinced there will be no diminution of sales when the present shortage shall be past. If you are thinking of investing in one of these machines, you should gain all the information you can from neighbors and manufacturers, and then, having decided what you want, you should promptly place your order with a reliable firm. You will not regret taking this practical and economical step.

## Improving the Breed

W. R. Nelson purchased cows on the Kansas City market with a view to using them in a demonstration which should prove that five successive crosses of pure blood would practically eliminate all traces of inferior ancestry.

Already, the second cross of three-year-old heifers by pure-bred bulls, show an increase in value of from \$25.00 to \$30.00 over the original, which were good-sized cows, good milkers and showing traces of beef ancestry. The three-year-old heifers were already almost as big as their mothers, though they had two more years in which to grow. In other respects they were pronouncedly superior to either heifers or steers of the first cross.

Stock raisers throughout the country are beginning to realize the vast importance and real economy of better bred stock.



\$6,000 Chester White Sire

He says, "The practice of breeding ewe lambs, even if well developed, leads to destruction of the flock. The size of the individual is checked, constitution is lessened, weight of fleece is greatly reduced, and the percentage of lambs raised from ewe lambs is generally only about fifty percent of that of the older ewes. \* \* \* No intelligent sheep raiser will breed ewe lambs, knowing that a healthy, vigorous flock of strong constitution can only be established by breeding the lambs the second fall, not the first. \* \* \* I have seen many flocks that were once big, strong, robust sheep, but which were later degenerated by breeding ewe lambs."

## Hand Labor or Milking Machines

The milking machine is getting a boost just now on account of the acute shortage of labor. A great saving is effected in this manner, as can be readily seen from the fact that the machine will milk from 25 to 30 cows per hour. Some extra time must be allowed for regular cleansing of the machine.

When kept in proper condition, the machine will help to furnish the milk in more sanitary condition than hand milking. The cows also prefer it, and it is absolutely harmless in its effect upon them.

While the machine is now specially desired because of the lack of farm labor, we

When it can be demonstrated that the time required to raise the whole standard of the herd is comparatively short, more breeders will be encouraged to go ahead and improve the strain on their own farms.

"Skim Milk" used to be a term of contempt almost synonymous with "good for nothing." But that was in the good old days before we had introduced science (or for that matter sanitation) into the dairy. Those days are dead and gone. No longer do we let little Billy blow on the milk in an effort to help us skim it. No longer are our ears shocked by such dialogues as "Tommy, where's the milk rag?" "Pa, Johnnie's got it tying up his sore toe." "Well, take that rag and rinse it good. I likes to have things neat."

No longer do we speak with disrespect of a product that holds such an exalted place in the aristocracy of food values. Here are some figures as to the nutrient value of skim milk.

From 100 pounds of skim milk 15 pounds of cottage cheese may be made, with a protein value equal to 22.5 pounds of pork. In other words, a quart of skim milk makes more than a third of a pound of cottage cheese. When a hundred pounds of skim milk is fed to a pig the skim milk is converted into about 4.8 pounds of dressed pork, when combined with other feeds to the best advantage.

# Send NO Money!

Just send coupon below and we will forward your shoes at once! They are the greatest shoe values ever offered. We are glad to send them NO MONEY IN ADVANCE because they are built so full of wear and are so comfortable and so good looking that we know you will keep them. Send no money—don't pay until you get your shoes—mail the coupon only and shoes will come at once.

## NATIONAL WORK SHOE

DIRECT TO YOU FROM THE SHOE MARKET OF THE WORLD

That is why the price is only \$3.65. Why pay \$5 or 6? Slip these shoes on in your own home. Note the splendid selected leather! Feel how soft and easy they are on your feet! Examine the "Indestructible" heavy leather sole. Customers write these shoes look good after 6 months of hard wear. If they aren't the best work shoe you ever saw, send them back and we'll return your money. You are the judge of the Style, Comfort and Quality. Use coupon TODAY and get your pair of these wonderful shoes while this special offer holds good.

BLACK OR TAN. ALL SIZES. BOSTON MAIL ORDER HOUSE, Dept. G, Essex Post Office Building, BOSTON, MASS.

SEND Only this coupon, no money. It brings these splendid shoes to you prepaid.

## NATIONAL DRESS SHOE

Smart and stylish. Genuine oak leather soles. Broad low heel. Extra quality uppers. These good-looking, dressy shoes are built for five toes and comfort. Our price only \$3.85. Compare them with the best \$7.00 shoes you ever saw. You must see them to appreciate their wonderful Style, Quality, Workmanship. You must try them on to enjoy their absolute Comfort. That is why we send them to you—no money in ADVANCE. Sent on approval. The shoes must convince YOU. Act NOW! Send coupon at once.



BLACK DRESS SHOES, \$3.85

Boston Mail Order House, Dept. G, Essex Post Office Building, Boston, Mass.

Send postpaid shoes marked below. I will pay for them on arrival. I am to judge them on approval. My money back double quick if I want it. I risk nothing.

Work Shoes, \$3.65 Dress Shoe, \$3.85

Size..... Color..... Size.....

Name.....

Address.....

## Keep Bees Next Year

For Honey, Money and Recreation

Write Gleanings in Bee Culture, Medina, Ohio, and ask this leader of all bee journals what it does for beginners in Beekeeping. You can succeed, if rightfully guided, the first year. Write today.

## THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

## Gaustic Balsam

IT HAS NO EQUAL

For—It is penetrating, soothing and healing, and for all Old Sores, Bruises, Cuts, Wounds, Felons, Bolls, Corns and Bunions. GAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Sore Lungs, Rheumatism and all Stiff Joints.

REMOVES THE SORENESS—STRENGTHENS MUSCLES. Cornhill, Tex.—"One bottle Gaustic Balsam did my rheumatism more good than \$120.00 paid in doctor's bills." OTTO A. BEYER. Price \$1.75 per bottle. Sold by druggists, or sent by express prepaid. Write for Booklet R. The LAWRENCE-WILLIAMS COMPANY, Cleveland, O.

## FREE

Handle has pictures of Presidents Wilson, Lincoln and Washington in Red, White and Blue. Good steel—nickel-plated. Given FREE for selling 15 pages. Patriotic Post Cards at 10c a package. When sold return \$2.50 and Patriotic Knife is yours. Order today. Address KEYSTONE CO., Box 520, Greenville, Pa.

FREE. Stem wind and art watch, guaranteed 10 years, for selling 25 art and religious pictures or 25 pages, post cards at 10c each. Order your choice. GATES MFG. CO., Dept. 457, Chicago.

## THE LEADER CHURN

GETS MORE AND BETTER BUTTER

You can churn in a few minutes with the Leader, stop butter waste and do away forever with the old-fashioned back breaking churn. Over 15,000 Leader owners are getting more and better butter in a third the time, and making churning day a pleasure—saving money, time and labor every day. Made of highest quality material—simple construction—nothing to get out of order—no hoops to fall off—no barrel to foul and sour—no iron bearings to make black grease—most durable and easiest running churn made. Pays for itself many times each season; will last a lifetime with proper care.

30 Days' Trial. We will send you this wonderful churn on 30 days' trial. Try it; see for yourself, the better grade of butter, the ease of operation—if you are not satisfied it is the greatest churn you ever used return it at our expense. Thousands of owners have made this same 30 day trial. You will not get a return if you return it. Send No Money. We originated the Leader plan of selling, which enables you to get any size Leader Churn you need. You take no risk—no money down—no deposits—no full 30 days' trial. After trial if you are satisfied it is the greatest churn you ever used send us one low introductory price. All we ask is that you will pay the express charges.

Special Introductory Prices. You cannot equal these prices anywhere—money cannot buy greater churn value. Why pay more?

3 Gals. Churn, \$5 - 5 Gals. Churn, \$5.50 - 8 Gals. Churn, \$6

We know just what the Leader will do, or we could not make such a startling offer. The money you lose in time, work and butter would pay for one many times. Send for one on this liberal selling plan. Simply write telling us the size churn you need—it will be shipped you promptly. Address Novelty Mfg. Co., Box 423 Abingdon, Ill.

SOLD ON THIRTY DAY TRIAL

## The Jefferson

RICHMOND, VA.

Most Magnificent Hotel in the South

## EUROPEAN PLAN

400 Rooms 300 Baths

Rooms Single and En Suite, With and Without Private Bath. Turkish and Roman Baths. Spacious Sample Rooms. Large Convention Hall.

RATES—\$1.50 PER DAY AND UP

O. F. WEISIGER, Manager

## GRIND FEED

USING YOUR AUTO

ASA STATIONARY ENGINE



YOUR Automobile will furnish cheap and efficient power for grinding feed, sawing wood, filling silos, shredding corn and all other work a 14 H. P. Gas Engine can do. Our Equipment Fits: Ford Overland Hudson Fordson Dodge Reo Studebaker Buick & others. Simple to connect—does not harm your car. Get one NOW—hundreds in use—\$35.00. Satisfaction guaranteed—only.

LAWRENCE AUTO POWER EQUIPMENT. Write for Circular. 400 Minnesota St., ST. PAUL, MINN. LAWRENCE AUTO POWER CO.

Kindly Mention American Fruit Grower when writing to Advertisers

Kindly Mention American Fruit Grower when writing to Advertisers





## Sprayer Builders for 33 Years

We have been builders of spraying machinery since 1884. Every machine that goes out from our plants today is backed by that 33 year reputation.

Bean Sprayers—for 33 years—have been built up to a rigid standard. Men who have bought one, have later bought as many as twenty more as their bearing acreage increased. Some of the country's largest ranches

are exclusively "Bean Equipped".

Learn all about this sprayer before you buy any other kind. There is no other like it. No other does what it does. Some very vital patents result in advantages in Bean Power Sprayers that no fruit grower wants to go without. The Bean throws more liquid with same power. Valves can be removed in two minutes each with engine running and full pressure on. And the Bean has no stuffing boxes. All are important features.

## BEAN Power Sprayers



**JOHN BEAN**  
Inventor  
John Bean who invented the first double-acting force pump used in wells, also invented and constructed in 1883 the first high pressure spray pump with air chamber.

Mail the coupon and we'll send the catalog. Address the factory nearest you.

Bean Spray Pump Co., 16 W. Julian St., San Jose, Cal.  
Bean Spray Pump Co., 12 Homer St., Lansing, Mich.

Send me catalog and full information without obligation on my part.

Name.....

Street.....

City..... State.....

Kind of Fruit Grown..... Number of Acres.....



## What Are You Paying for Apples?

Apples of all kinds and varieties, from windfall and culls to "extra fancy," have brought high prices this fall. Doesn't it make you wish you had some bearing apple trees to supply your table or to sell at a good profit?

Prices of good fruit—good in color, size and quality—will surely be high for many years after the war—higher even than at present, while prices of farm crops will not remain at the present level more than a few years after the Hun is beaten.

The man who starts an orchard now will have good cause for congratulating himself a few years later upon his foresight.

## Neosho Nurseries Co. Neosho, Mo.

Plant everbearing strawberries this spring for a crop next summer and fall. Grapes and bush fruits begin to bear the second year. Some of the fruit trees produce the third year. We not only supply first class trees and plants, but we also furnish concise, reliable, complete information on how to take care of them. We leave no stone unturned to help our customers and to see that they enjoy "growing satisfaction."

A little thought now is likely to mean substantial profit by and by. Now, whether you plant for home or commercial purposes, it is of vital importance to start right. If you plant the wrong kinds or varieties now you may not find it out for at least three years. It's easy if you know how. Let us help you. Send today for our

### New Free Fruit Book

It gives valuable boiled-down information on all kinds of fruit, what and when to plant, how to choose a good site, what varieties to select, planting distances, etc., also prices direct from nursery to planter.

Successors to Wm. P. Stark Nurseries



Neosho Nurseries Co., Box 212, Neosho, Mo.  
Please send book as checked:

- ....Book of Fruit Trees and Plants free.
- ...."Inside Facts of Profitable Fruit Growing" (10c inclosed).
- ...."How to Beautify Your Home Grounds" (10c inclosed).

Name.....  
Address.....  
(Please give County and Street or R. F. D. number.)

Kindly Mention American Fruit Grower when writing to Advertisers

## Season of Ripening for Peaches

**Y**OU CAN have fresh, ripe, home-grown peaches throughout the entire season of three months by selecting extra early, early, midseason, and late varieties. The exact date of ripening of the different varieties will vary with your locality, depending on the altitude, latitude, the soil, the amount of sunshine, rainfall, etc. It will also vary in the same locality from year to year, depending on whether it is an early or late season, but the relative date of ripening is about the same during normal seasons.

The peach season does not cover the entire year in the way that the apple season does. It is approximately one hundred days from the beginning of the ripening of Mayflower, the earliest, to the first ripening of Heath Cling, which is the latest. However, the Elberta is well known and for that reason the Mayflower, which is the earliest, and the Elberta, which comes fifty-seven days later, are used as the standards of comparison, for almost everyone knows when one or the other of these two varieties ripens in their neighborhood. Those who do not know the usual date of ripening of either the Mayflower or the Elberta, will find the following dates from representative localities a safe guide.

The date given is for the maturity of the peach, when it is ready to pick and ship and not when it is dead ripe on the tree, which will be a few days later. Sometimes it pays to make two different pickings, the last being a week or two weeks later than the first, depending on the season, the variety, and the condition of the crop.

### Peach Ripening Dates

Mayflower Ripens	Elberta Ripens
Colorado, Palisade..... July 7	Colorado, Palisade..... Sept. 5
Connecticut, So. Glastonbury..... July 2	Connecticut, So. Glastonbury..... Sept. 5
Georgia, Fort Valley..... May 15	Georgia, Fort Valley..... July 12
Michigan (Southwest)..... July 3	Michigan (Southwest)..... Sept. 10
Michigan (Northwest of lower peninsula)..... July 17	Michigan (Northwest of lower peninsula)..... Sept. 18
Missouri, Columbia..... June 15	Missouri, Columbia..... Aug. 25
New Mexico, Santa Fe..... June 2	New Mexico, Santa Fe..... Aug. 1
Ohio, Wooster..... July 3	Ohio, Wooster..... Sept. 1
Texas, College Sta., Brazos Co..... May 11	Texas, College Sta., Brazos Co..... July 10
Utah, Brigham City..... July 8	Utah, Brigham City..... Sept. 6

Days ahead of Elberta	Days ahead of Elberta
<b>EARLIEST—</b>	<b>MEDIUM—</b>
Mayflower, Semi-C..... White 57	Belle, Free..... White 9
<b>VERY EARLY—</b>	J. H. Hale, Free..... Yellow 5
Greensboro, Semi-C..... White 50	Early Elberta, Free..... Yellow 3
Arp Beauty, Free..... Yellow 45	Elberta Cling, Cling..... Yellow 2
Red Bird, Semi-C..... White 40	Elberta, Free..... Yellow ..
Early Rose, Cling..... Red 35	
<b>EARLY—</b>	<b>LATE—</b>
Eureka, Free..... White 30	Crawford Late, Free..... Yellow 7
Mamie Ross, Semi-C..... White 30	Crosby, Free..... Yellow 15
Waddell, Free..... White 30	Late Elberta (Stark City) Free..... Yellow 20
Alton, Free..... White 27	
Carman, Free..... White 27	
Champion, Free..... White 15	
Illinois, Free..... White 15	
Hiley, Free..... White 15	
Lola, Free..... White 15	
Fitzgerald, Free..... Yellow 13	<b>VERY LATE—</b>
	Krummel, Free..... Yellow 37
	Heath Cling, C..... White 40

## That New Orchard

By D. J. Wood, Nebraska

**E**VERY year many new orchards are planted, both home and commercial. Experience is quite a factor in both cases. The success of the commercial depends upon the varieties that bear the best, and are the best sellers and keepers. The home orchard should contain the varieties that produce summer, fall and winter fruits—sweet and tart—good bakers and good sauce, as well as good fresh eating.

### Location Important

Some people locate the orchard in a draw, or on low land, and are forever wondering why the late frosts kill their blossoms. The best place is on high ground with a windbreak, so that the wind will not blow off the fruit. On high ground there is the least loss from frost, as the warm air rises and the wind keeps the air in motion.

The best soil is none too good, still, if you will feed it plenty of fertilizer, gravelly soil will do.

### What Varieties to Plant

This varies much with your climate. A few kinds seem to do well almost anywhere. For summer, Early Harvest and Sweet and Red June. For fall, Wealthy, Maiden's Blush. For winter, Jonathan, Grimes Golden, Ben Davis, Winesap, Janet. You can add to these, but they are the standards. Almost everyone wants a few crabs, Whitney and Siberian.

Do not make a mistake and put out a lot of early and fall apples. Plant of these only what you need for home consumption. There is small sale for them and they are poor keepers. You may increase your winter trees as there will always be a demand and a good price for their fruit.

### Give Them Room

Do not crowd your trees. Apple trees should be from 30 to 36 feet apart, you can fill in between the trees in the row with short-lived trees such as cherry and peach. Do not put plum trees, as they must be planted in a clump for best results. To conserve your ground you can still add currants and gooseberries in the rows be-

tween the trees, as they like partial shade. Yes, you may add raspberries also.

Plant nothing between the rows that you will not cultivate during the growing season. Potatoes and corn are the ideal crops. Keep a dust mulch and keep all weeds out. Once a year, at least, spade up the soil in the row, and be liberal with fertilizer. A tree must be fed if it is to grow.

### Keep Plat of Orchard

Do not fail to make a plat of your orchard. Locate and name each tree planted. You cannot mark them satisfactorily without mutilating them, and you will often want to know just what kind of tree is in a certain place. It may die and you will wish to replace it with the same variety. You will want to know if your trees are true to name. There is much pleasure in certainty of variety in fruit culture.

For the first five years trees should be wrapped in the fall for protection against rabbits. Once a year, preferably in the spring, mix whitewash and a solution of strong lye and swab the trunk of the tree and the large limbs. This will kill insects hid in the bark, and give you a healthy tree. Get some good table of directions for spraying and do not fail to spray. Thus you will have a thing of use and joy for a long time, adding much to the value of your farm and more to the comfort and health of the home.

The British Columbia Hop Co. has obtained a big contract from the United States government to supply American troops with dried vegetables.—British Columbia Farmer.

A distillate flame spray has been used against grasshoppers in San Bernardino County, with telling effect, according to the California Cultivator. The grasshoppers lay their eggs in large colonies near the hayfields. Within the first ten days after hatching they do not leave their nests and can be exterminated by the spray.



le.  
ou  
a-  
cal  
all  
up  
th  
to

or-  
at-  
ily  
will  
ree  
ou  
ri-  
ees  
ure  
ne  
st  
be  
of  
ree  
ets  
hy  
for  
nus  
r a  
of  
und

ob-  
ted  
can  
ish

sed  
ino  
to  
as-  
near  
ays  
heir  
the



for

Tr



In

**T**HE  
T  
he  
everything  
trucks, a  
is the  
para  
st info  
about th  
We as  
large ma  
ER subse  
tractors  
once refe



some vis  
actual fac  
While  
only in m  
far ahead  
the fact  
rapidly  
field by th

Nu

Accord  
tainable,  
3,000 tru  
while thi  
American  
175,000,  
for war p  
that on  
extreme  
stic  
ing th





# Tractors Trucks and Engines



## Introducing a New Member

**T**HIS department has a new editor. This doesn't mean, however, that he is going to be able to tell you everything you would like to know about trucks, and tractors and engines. The fact is that trucks and tractors are so new, comparatively speaking, that even the most informed men have a lot to learn about them.

We assume, of course, that at least a large majority of AMERICAN FRUIT GROWER subscribers are interested in trucks and tractors because the "motorized farm," once referred to as a sort of wild dream of

show that the demand for trucks is growing very rapidly.

There is not available at this time any information as to what extent motor trucks are being bought by farmers, that is, what percentage of the truck production is being used by farmers.

It is quite generally conceded that with the advent of good, all-the-year-round roads, most of the products of the farm, whether grain, fruit or livestock, will go to market by motor trucks. Whether by individually owned trucks or a regular truck transportation service, will depend on



Showing Excellent Results Secured by Tractor Plowing

some visionary persons, is becoming an actual fact in many cases.

While the time when horses will be seen only in museums or side shows may be so far ahead that none now living may see it, the fact remains that the horse is being rapidly displaced in the transportation field by the gasoline motor.

### Numbers Rapidly Increase

According to the best information obtainable, there were but approximately 3,000 trucks manufactured ten years ago, while this year it is estimated the output of American truck manufacturers will be 175,000, exclusive of those manufactured for war purposes. It is a well-known fact that on account of the government requirements only a small portion of the domestic demand for trucks was supplied during the past year, all of which goes to

whether the individual farmer has sufficient work for a truck to justify owning one.

### Who Should Buy a Truck

This brings up the question as to what amount of work must a man have to justify him to own his own truck? And this is a question about which there is no small amount of arguing.

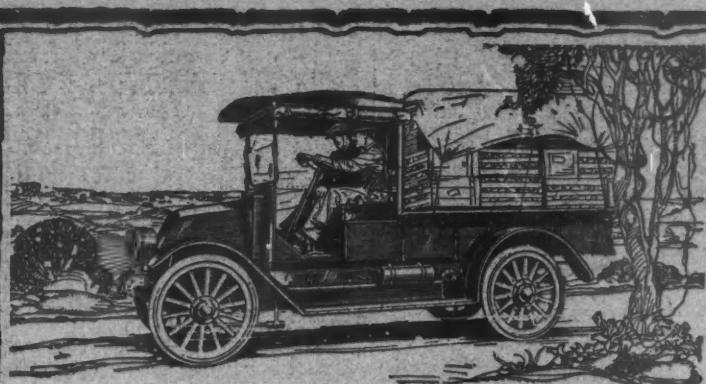
In the case of the man who makes trucking his business, and who has to hire drivers, it is obvious that he must keep his trucks busy, for he has a continual overhead expense which makes steady operation necessary if a profit is to be realized.

But take the fruit farmer with a big crop of fruit that must be moved quickly. The possession of a motor truck at the right time may mean hundreds of dollars saved on just one crop.

It is needless to call the attention of a



Going to Market with a Full Load



## International Motor Trucks on the Farm

**T**HE motor truck, just coming into general use on the farm, is fast proving itself a most valuable farm machine. Farm hauling with horses takes a lot of time, keeps the driver from doing much needed farm work, and costs altogether too much in money as compared with the speedier, economical truck.

Mr. L. C. Henry of Utica, Minn., purchased an International Motor Truck to haul his live stock and farm produce to market and to bring return loads from town. He says, "We use the truck for nearly every kind of hauling. It saves more time than any other machine in our farm service." Five of Mr. Henry's neighbors bought International Motor Trucks when they learned, from his experience, what a useful economical farm machine he had.

An International Motor Truck can be used both on the farm and on the road. It is a safe machine to buy, for over 15,000 are now in service. We have a dealer, a branch house or a service station somewhere near you. Write us for prices and complete information about all seven models.

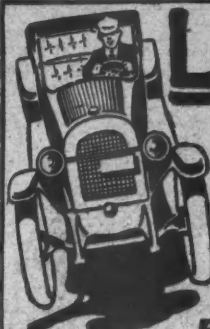
International Harvester Company of America



CHICAGO

(Incorporated)

U S A



## Learn Auto and Tractor Business

**\$100 TO \$400 A MONTH.** Regardless of your age or draft classification, you have opportunities in the Motor Mechanic industry, service before known. Out of the Army as well as in the Army, motor mechanics are urgently demanded. **Learn in 6 to 8 Weeks.** We refer you to successful graduates from here, who now earn big money as Repairmen, Drivers, and Superintendents. Many own their own Garages, making \$200 to \$500 a month. In the Army hundreds and hundreds of men with Rafe Training Certificates have easily passed into the Motor Transport Sections for mechanical work behind the lines. **Free Book** Write at once for 7-day Trial Offer and Big Free Book fully explaining opportunities.

**RANE AUTO & TRACTOR SCHOOL**

2374 Oak Street, KANSAS CITY, MISSOURI.

## AGENTS: \$40 A WEEK

**New Kerosene (Coal-Oil) Burner** Makes any stove a gas stove. Burns just like gas. Cheapest fuel known. Wonderful labor saver. Safe.

**Free Sample to Workers**

**Pays for itself in a short time**

No kindling to cut—no coal to carry—no ashes to empty. Everybody delighted with it. The high price of coal makes this burner sell everywhere. Agents just coin money. Write for Agency and demonstrating sample.

Thomas Burner Co. 970 Ray St. Dayton, Ohio



## This \$100 Machine Now \$49

The same money that a rebuilt or second hand typewriter costs buys you the famous Oliver, brand new, never used, the machine that big business uses.

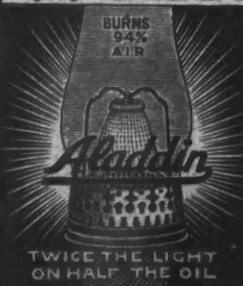
**\$3.00 a Month**

First from the factory for free trial—then you pay \$3.00. We put the price of the Oliver, not by cheaper construction but by cutting out wasteful selling methods. This ad and the Oliver, both great, are yours—no cash sale. Write for booklet "The Oliver on the Farm" and particulars today.

THE OLIVER TYPEWRITER COMPANY 3700 Oliver Typewriter Bldg., Chicago, Ill.

**After January 1st—Price \$57**

## WHITE LIGHT FROM KEROSENE



**Beats Gas or Electric** You can now make your home bright and cheerful and SAVE ONE-HALF ON OIL. Tests by Government and leading Universities prove this wonderful new Aladdin is nearly five times as efficient as the best round wick flame lamps. BURNS 50 HOURS ON ONE GALLON common kerosene (coal oil). No odor, smoke or noise, no pumping up, easy to operate, won't explode. Won GOLD MEDAL. Guaranteed.

### TRY IT 10 NIGHTS FREE

Prove for yourself without risk that this remarkable white light has no equal. If not entirely satisfied, return it at our expense. \$1000 REWARD will be given to anyone who shows us an oil lamp equal in every way to this new Aladdin.

**GET YOURS FREE!** We want one user in each locality to whom we can refer customers.

In that way you may get your own without cost. Write quick for 10 DAY FREE TRIAL OFFER and learn how to get one FREE.

**MANTLE LAMP CO. 323 Aladdin Bldg. CHICAGO**

LARGEST KEROSENE (and oil) MANTLE LAMP HOUSE IN THE WORLD

**MAKE MONEY SPARE TIME OR FULL TIME!** No previous experience necessary. Our trial delivery plan makes it easy. NO MONEY NECESSARY. We start you. Sample sent for 10 days' trial and GIVEN FREE when you become a distributor.





**Reliable power**

More power, per gallon, from cheap kerosene than from high-priced gasoline. Easy to start in any weather.

**OTTAWA** 90 Days Trial

**Kerosene Engines**

Save big money on price and half on fuel. For all outdoor and indoor work. Thousands in use. All sizes and styles from 1 1/4 H-P to 22 H-P Complete mounted saw rigs or saw frames separate, suitable for mounting on your own trucks.

**Book Free** Easy to understand—Explains all you want to know about engines. Write for Present Low Prices.

**OTTAWA MFG. CO., 1170 King St. Ottawa, Kansas**

**World's Best Roofing**

Freight Paid

"Reo" Cluster Metal Shingles, V-Crimp, Corrugated, Standing Seam, Painted or Galvanized Roofing, Siding, Wallboard, Paints, etc., direct to you at Rock-Bottom Factory Prices. Positively greatest offer ever made. We Pay the Freight.

**Edwards "Reo" Metal Shingles**

cost less; outlast three ordinary roofs. No painting or repairs. Guaranteed red, fire, rust, lightning proof.

**Free Roofing Book**

Get our wonderfully low priced and free samples. We sell direct to you and save you all in-between dealer's profits. Ask for Book No. 128.

**LOW PRICED GARAGES**

Lowest prices on Ready-Made Fire-Proof Steel Garages. Set up any place. Send postal for Garage Book, showing styles. Write Edwards Mfg. Co. 1204-1254 Pine St., Cincinnati, O.

**FREE Samples & Roofing Book**

**RO-SAN Indoor Closet**

The original chemical closet. More comfortable, healthful, convenient. Takes the place of all outdoor toilets, where germs breed. Be ready for the long, cold winter. Have a warm, sanitary, comfortable, odorless toilet right in the house anywhere you want it. Don't go out in the cold. A boon to invalids.

**GUARANTEED ODORLESS**

The germs are killed by a chemical in water in the container. Empty once a month as easy as ashes. Closet guaranteed. Thirty days' trial. Ask for catalog and price.

**HOWE SANITARY MFG. CO.**

No. 5412 8th St., Detroit, Mich. Ask about Ro-San Washstand—Hot and Cold Running Water Without Plumbing.



**NO STUMPS too big.** Get the richest, most productive and into crops. Make more money. Hercules on 30 days' free trial. Three-year guaranty. Safe and fast. Send post card for free book. Introductory price offer now.

**HERCULES MFG. CO.**

1170 27th St., Centerville, Iowa

**Trees and Seeds That Grow**

We sell at wholesale prices good nursery stock and seeds of all kinds—reliable hardy western grown stock that we can recommend. 32 years in business selling by mail and most of our business comes from satisfied customers of previous years.

Ask for free book

**Sondergerg Nurseries & Seed House**

31 Court Street Beatrice, Nebraska

fruit grower to the difference in market value between fruit that goes to the market fresh and in good condition and fruit that is bruised and bounced about for several hours in a lumber wagon.

One of the things in favor of a motor truck is, that when it is not in use the only expense to be figured is the interest on the investment and the insurance. If properly cared for the depreciation during the idle periods is very small.

#### Let's Co-operate

As stated at the beginning of this article the editor is not going to assume the attitude of knowing all there is to know about tractors and trucks on the farm. He is, however, going to do his best to co-operate with the readers of this paper in getting together the best information possible on the subject.

We hear a great deal about the new spirit that the war, has created in the world. We have learned what nations and individuals can do by co-operating.

We know that a great many of our readers are already using motor trucks and we want those readers to tell us of their experiences.

If you own a motor truck tell us about it. Tell us how much it costs you to operate it, what advantages you find over horse transportation.

This will encourage others to tell of their experience and, through an exchange of ideas, all will benefit.

Do not hesitate to write on the plea that you have never written for publication. What we are after is facts, and as far as possible figures—we don't care how they look—what kind of clothes they wear—just so they come.

That motor trucks are to form an important link in the transportation system of the country is now beyond question. But the question many an individual farmer is trying to solve is, "Will it pay me to own and control my own transportation facilities?"

Let's have a regular experience meeting—on trucks and tractors.

#### Shortening the Distance to Market

The statement was recently made by an eminent food authority that 60% of all the food raised in this country never reaches the consumer.

If it doesn't reach the consumer it must be wasted. This seems like a strong statement. It may be too strong, but we all know that every year there is an enormous waste of food in this country because of the lack of proper distribution.

Especially is this true of fruit, which is so perishable. Even in these war times, when the consumer has to pay such high prices for everything in the way of food, there is enormous waste.

Much of this is being corrected by improved methods of transportation. It is impossible for every farm to be located near a railroad station or on a trolley line, but it is possible for every farm to be on a motor truck line; and there are few communities in the well settled portions of the country that are so far from a good market center or important shipping point that it cannot be reached in less than a half day's travel with a motor truck, which means that a farmer with a good motor truck can deliver a load of fruit or other farm produce a distance of from thirty to sixty miles from his home and spend the evening of the same day at his own fireside.

Recently the writer desired to put away some apples for winter use. Good apples of the variety he wanted were selling in the city for from \$2.00 to \$2.50 per bushel. I "took a day off" and drove some thirty miles, passing through two or three good towns and bought nice, hand-picked apples from a farmer at \$1.00 per bushel.

With a truck this farmer could have taken fifty bushels of apples to the city and sold them at \$2.00 per bushel, and made the round trip in one day. Fifty dollars wouldn't be at all bad for a day's work and a few gallons of gasoline. This man, however, lived within fifteen miles of a manufacturing town of 25,000 inhabitants where produce commands practically the same prices—and sometimes higher—as the larger city.

#### What of the Tractor?

With the possible exception of the automobile the farm tractor has grown in favor more rapidly than any other new machinery.

Because of the constantly increasing value of horses, the advancing prices of

horse feed and the growing scarcity of man help on the farm, the farm tractor has fairly leaped into prominence in a few years.

Its advent has been so rapid its path is strewn with wrecks. Manufacturers by the score have entered the field and many of them has made the serious mistake of putting quantities of tractors on the market before they had been thoroughly proven, and farmers in their eagerness to acquire this new found help on the farm have paid their money for machines which soon proved to be little more than junk.

We do not accuse the manufacturers with any intention to defraud, for in the end they were losers—many of them financially ruined. It was simply a mistake in judgment. There existed a demand for a tractor that would do for the farmer of 160 acres or less what the big steam traction engines had been doing for the big ranch farmers of the west and northwest.

Unfortunately many manufacturers in their desire to produce a tractor at a price they felt the average farmer would be willing to pay made them too light. Others were too complicated and could not be operated without expert help.

#### What Is Your Experience?

Every reader of AMERICAN FRUIT GROWER who is interested in tractors should read the letter in this issue by Art. E. Walker. We also commend Mr. Walker's letter to tractor manufacturers, present and future.

As Mr. Walker points out, the successful tractor must not only work satisfactorily when operated by an expert from the factory, but it must be simple enough to be operated by the ordinary individual of common sense. On the other hand, the best and simplest machine made can be made a failure if care and good judgment is not used by the operator.

We are also pleased to be able to present the experience of other owners of tractors. We would like to have our readers make use of this department to discuss freely this important subject. "In the multitude of council there is wisdom," and through an exchange of ideas we can all be benefited.

#### Some Operating Data

While a single test of any tractor on a small parcel of ground is not of much importance, it is quite interesting to note the results of a demonstration of twenty different tractors recently made in Ohio.

There were seven machines that burned gasoline and thirteen that burned kerosene for fuel. Each tractor plowed 2.07 acres at a depth of 8 inches, in light clay loam, with a heavy growth of clover. Gasoline was figured at 25 cents per gallon and kerosene at 13 1/2 cents per gallon. The average fuel cost per acre with the gasoline machines was 81 cents and that of the kerosene machines 53 cents. The test would seem to be largely in favor of the kerosene-burning motors, but there is a great difference of opinion among engineers as to the ultimate effect of kerosene on the motor and lubricating oils.

#### A Colorado Experience

Editor of AMERICAN FRUIT GROWER:

I notice in an issue of your paper that came to hand that you want reports of experience from farmers who are operating tractors. I am not selling tractors and will tell you the plain facts as I found them. Sometimes an agent lets his enthusiasm get the better of his veracity and the farmer buys something in which he is later disappointed.

You doubtless know that the farmer needs machinery that will work in practice, not in theory alone. Now, I don't mean that the tractor is not a labor-saving device. It is; but at the same time its drawbacks should not be concealed. If it is a labor-saving device it will come into general use, if not it won't.

I find that a farmer doesn't want an ordinary tractor on sandy soil. An engine, no matter how powerful, is difficult to operate in sand. We pulled a house through a muddy field with an 8-16 easily enough, but the same engine would not pull its own weight in many places on a sandy field nearby.

We rigged a device upon the wheels consisting of two by fours bolted fast. This worked very well as long as the wooden pieces lasted, but they soon broke off. Iron pieces would be better, but I believe the machine that lays its own track is the proper one for sand. Any farmer who busy

#### American Fruit Grower

without a consideration of his ground may regret it.

Many farmers fail to consider their individual needs when buying. Some buy a machine too small, others buy one too large. For all farm purposes an 8-16 is too small. You must make allowances in the horse power for baked ground, etc., any place where an extra pull is needed. A 12-25 is a practical machine for farm use.

They have the power and yet are not heavy enough to pack the ground very hard. Don't get a larger size unless you have quite a bit of sod to break. I heard a man say the other day that his 30-60 packed the ground so hard that nothing grew in the wheel tracks. The machine the right size is a labor saver but one too large or too small is an extravagance.

#### Farmers Should Learn to Operate

Another source of discontent, of which I would warn farmers, is this: Many, in fact the majority, know very little about the tractor to begin with, and they learn by experimenting, which sometimes is very costly. As a rule, I find that trouble lies in the operator more than in the machine. I have seen a machine that did excellent work under a man who knew how to handle it and when put in the hands of a new man was soon ready for the junk heap.

Now there is no doubt but that the tractor has come to stay, and it will be but a matter of time until every farmer owns one. The farmer should be truthfully advised as to what to buy, and when buying to consider his needs and his soil.

It is poor tractor business to sell farmers impractical machines. Such cases cause hesitancy on the part of other farmers. In addition to buying judiciously the farmer should educate himself in the operation of the tractor. When all this is done there will be a hundred per cent added efficiency among tractor users. In these days of war we owe it to the country to make every animal, every machine, every labor-saving device, a hundred per cent efficient.

ART. E. WALKER, Colorado.

#### Maine Tractor Experience

Editor of AMERICAN FRUIT GROWER:

I notice you call for experience of those using tractors. I bought a 9-18 Case in June a year ago, and used it for fitting a piece of buckwheat. As haying was coming on, did not use it more until ready to thresh. Used it for threshing and filling silo. Good power. Started in for fall plowing about the middle of October, and broke clutch slide first day. It took a month to get this fixed. I got only two half days fall plowing as it was freezing nights, so I could not continue.

This spring is has run steadily and can do six horses' work at plowing and harrowing, when it runs. It requires about two hours' care a day, and as my men work only nine hours, about seven hours is all I get in the field, and not always that. It is no good in the mud, and will dig itself in quick if the wheels begin to slip around.

I do not figure that we can do our work any cheaper than we did with horses, but it does increase our capacity. In Maine our year's work depends on what we can get done in our short spring season, and we have never been able to get enough crops in in-time to make the farm pay. We are able to turn work off much faster, having the tractor, and hope to make a good showing this year.

Every day the tractor works it shows we have good care, if you wish to keep it out of the machine shop. There is something to it besides just steering it, and the operator must either be a machinist or be able to learn quickly how to take care of the machine. An operator can quickly ruin a machine if he has not good judgment in care and use of a tractor.

The machine I have is perhaps as well made for its job as an automobile is for what is required of it, but you will use the tractor more in one day's plowing than you are apt to use the automobile in two weeks, and it must have care in proportion.

I should advise anyone not to get the idea that they can get along without horses if they get a tractor. Take the mowing machine. If you use the tractor you must have two men, the same with the reaper, that is if you use the same machine you had for the horses, and the man is as expensive as the beast and harder to get. To sum up I would say—buy a tractor to increase capacity, if you can and will take care of it. It is not much good on rough, hilly or stony ground.

J. L. DEEN, Maine.



# Your Christmas Problem Solved

Send your Friends Ten Pure Bred, Pedigreed Fruit Plants with Complete Instructions for Planting. Set them out according to instructions and they will have fine fruit the following summer, and they will also receive the American Fruit Grower.

Let the waste space in your back yard or garden produce bushels of luscious raspberries, blackcaps, dewberries and blackberries. Do you really know what fresh, ripe fruit tastes like?—picked every morning while the dew is still on the vines? Berries that you buy at the store are usually shipped in from a distance, that means they have been picked before fully ripe. Fruit that ripens naturally, on the vine, tastes different, infinitely better. And you can grow it in your own back yard.

For you, for every reader of American Fruit Grower, we have selected a collection of five of the best small fruits, and we want to send you two of each, **TEN IN ALL**. This will give you enough plants for a fine War Fruit Garden. Read the descriptions below:

## 2 Improved Lucretia Dewberry

The berries, which are borne in heavy clusters, measure an inch through, and an inch and a quarter long. Incomparably sweet and juicy when fully ripe, and has but few, very fine seeds. By nature a creeper, the vine should be trellised. The large white blossoms are very attractive.

## 2 REX Everbearing Red Raspberry

The REX begins to bear before any of the other raspberries and continues after all others have quit. The fruit is of medium size, and of very good quality. On account of the long season, the vines yield immensely. You will secure a good picking every week from June to October.

## 2 Cuthbert Raspberry

Large berries, of wonderfully sweet flavor, are borne in heavy profusion. The Cuthbert sets all its fruit at one time, and ripens it altogether. One or two pickings will usually gather the entire crop. On this account, as well as its quality, it is the favorite commercial raspberry

## 2 Cumberland Blackcap

No collection of small fruit plants would be complete without the grand old Cumberland. The fruit is large, firm, of good flavor, and is borne in large clusters that ripen very evenly. The canes grow large and strong, enabling them to ripen tremendous crops of fine berries.

## 2 Ward Blackberry

Handsome in appearance and as beautiful in quality, the Ward has no peer among the blackberries. The canes grow rank and tall, and are literally covered with immense clusters of shining blackberries. For eating fresh, for pies, preserves, jellies or jam, the Ward is superb.

PLANT THEM THIS  
SPRING

PICK FRUIT  
THE FOLLOWING  
SUMMER

These Ten Fruit Plants have been selected from strains that, for generations, have produced immense crops of **Quality** fruit. They are hardy, will succeed anywhere in the United States, and will not winter-kill. Growing small fruit is a fascinating pastime, and it is very profitable. Small fruit, in actual cash, will produce more value from the ground used than any other crop.

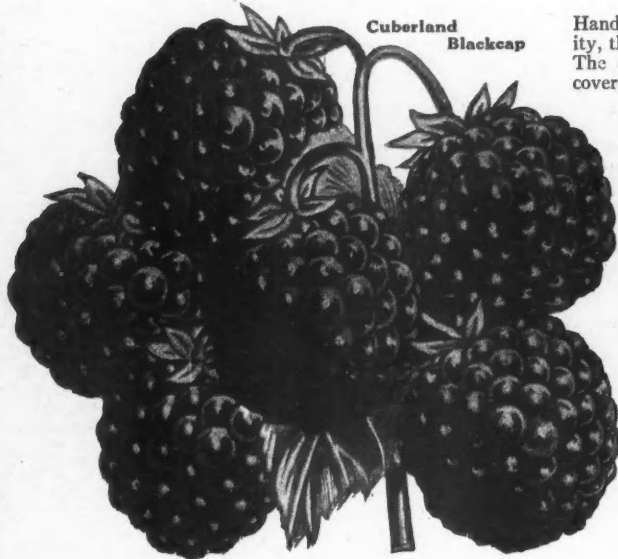
After you have planted this War Garden Collection, and have picked its luscious berries for one season, you will undoubtedly want to make a larger planting, and this you can easily do. Each year your ten plants will produce hundreds of new plants of the same high quality as the plants we send you. The important thing is to get started right, with the best strains of the most paying varieties. The plants in this Big Collection are the very best we can secure.

## Let Us Give You a Start in the Paying Small Fruit Business

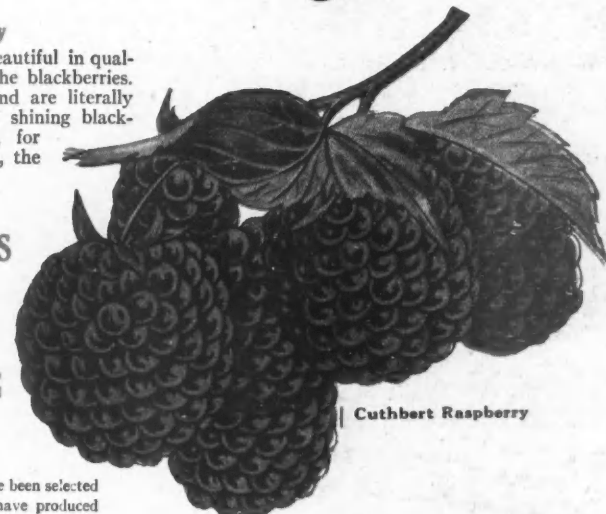
Use these Ten, Fine, Pure-Bred, Pedigreed Fruit Plants for "foundation stock" and grow hundreds of plants of the same fine quality, for future planting or for sale. This will provide you with a nice income, in addition to that secured from the sale of the fruit. The ten plants we send you, alone, are enough to supply your table with fresh fruit all season, but by extending your planting with the new plants each season, you will soon have a paying Fruit Garden.



Improved  
Lucretia  
Dewberry



Cumberland  
Blackcap



Cuthbert Raspberry



REX Everbearing Red Raspberry



Ward  
Blackberry

## Our "WAR FRUIT GARDEN" Offer

**Do Not Wait.** Planting time will soon be here. You cannot secure plants of better quality or plants that will bear quicker. We guarantee that the plants will reach you in good condition and grow to your satisfaction. They will be shipped you in time for spring planting.

### You Get All 10 Plants

American Fruit Grower, 1 year . . .	\$ .50	American Fruit Grower, 2 years . . .	\$ .75
War Fruit Garden, 10 plants . . .	.50	War Fruit Garden, 10 plants . . .	.50
All for . . .	\$ .75	All for . . .	\$1.00

AMERICAN FRUIT GROWER, 329 Plymouth Place, CHICAGO

### "WAR FRUIT GARDEN"

AMERICAN FRUIT GROWER,  
329 Plymouth Court, Chicago, Ill.

Gentlemen: Enclosed find \$1.00 for which please send me the American Fruit Grower 2 years .75 and send me the 10 Fruit Plants in time for Spring planting.

My name .....

Street or R. R. No. ....

Post Office ..... State .....



## Fortunes Made In Fruit-Fogged Orchards

THREE years ago Fruit-Fog, the scientifically atomized super-spray, was introduced to American orchardists. Today records of crop increases are available which prove it a most phenomenal success.

H. S. Branaman of Northwestern Missouri, received only \$9 from an acre of unsprayed Ben Davis apples. From another acre sprayed *thoroughly*, he received \$507.

Charles Tanzenberger of Jefferson Barracks, Mo., got 3 barrels of cider from the crop of his 140 unsprayed trees. The next year, due to thorough spraying, his profit from the same trees was \$1813.

Increases of 100%, 300% and 1,000% are common. Even 5,000% increases have been reported.

The surprising results shown in Fruit-Fogged orchards are due to the fact that this fine spray eradicates the dangerous hidden pests which no coarse, heavy spray can reach.

## HAYES FRUIT-FOG SPRAYERS

These scientifically designed sprayers are the most highly perfected in the world. Every part has been developed and tested in our horticultural department. Every piece of material is the best for its purpose.

Hayes Fruit-Fog Sprayers are equipped with the famous Fairbanks-Morse "Z" engine. This engine was

selected by our experts after thoroughly testing every engine on the market. It guarantees the best possible power service. We make over 50 styles of sprayers, both power and hand, for every spraying purpose. This includes the celebrated Fruit-Fog Gun, the highest development of speed and thoroughness.

### Nation-Wide Service

Users of power equipment know the importance of quickly available service. When spraying time is short the delay occasioned by some trifling trouble is often disastrous.

We maintain stocks and parts of sprayers and engines at 24 points throughout the nation. This means that no matter where you are located, expert service is within a few hours of you. It also assures quick deliveries.

### Write for Manual of Spraying

Mr. E. H. Favor, our scientific horticulturist, has prepared a new manual on fruit spraying. This guide is a real text book, clearly and concisely written—a veritable encyclopedia on spraying. It is finely printed and durably bound. The published price is \$1.00. Yet we will mail you a copy if you send us the coupon with 25c stamps or coin.

### Hayes Pump & Planter Co.

Dept. P,  
Galva, Ill.

### Ask Mr. Favor

MR. E. H. FAVOR, head of our Horticultural Department, is a nationally famous authority on fruit raising and spraying. For many years he was editor of one of our leading fruit papers. He was also associated with two State experiment stations in scientific work.

Mr. Favor's experience is at the command of any fruit grower in America. If you have any orchard or garden problem that perplexes you, "Ask Mr. Favor." He will write you personally.



Successful  
Spraying

FRUIT FOG

Hayes  
Pump &  
Planter Co.

Dept. P, Galva, Ill.

I am enclosing 25 cents. Please send copy of big Spraying Manual and your complete catalog.

I have fruit \_\_\_\_\_ trees.

Name \_\_\_\_\_

P. O. \_\_\_\_\_

Street and Number \_\_\_\_\_ State \_\_\_\_\_



